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Isolation and Identification of Probiotic Bacteria for the Management of Epizootic Shell Disease

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ISOLATION AND IDENTIFICATION OF PROBIOTIC BACTERIA FOR THE MANAGEMENT OF EPIZOOTIC SHELL DISEASE

BY

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ABSTRACT

I. Abstract

Epizootic shell disease (ESD) is an emerging disease in the American lobster (*Homarus americanus*) characterized by lesions, mainly on the carapace. The diseased appearance of the shell due to the lesions has had significant negative impact upon the lobster fisheries in New York, Connecticut, Rhode Island, and Massachusetts, since fishers are not able to sell affected lobsters to the more lucrative live market. ESD lesions are different from other shell diseases found in the American lobster populations because they are due to a poly-microbial infection that degrades the epicuticle layer, while the pillars of the chitin matrix remain intact in the lesions. ESD was first described in the 1980's, and has shown the highest prevalence in Southern New England since the late 1990's. In inshore waters, ESD was estimated to affect 10-40% of the lobsters with 50-80% of the ovigerous females affected by ESD. Additionally, ESD has expanded to lobster populations outside the original geographic range. New or consistent disease observations have been seen in Maine at low levels of disease prevalence. The increase in ESD has generated concern for the health of the lobsters and the economic status of the fishery.

It has been shown that probiotics are an effective way to prevent infectious diseases in a variety of animals, including fish and shellfish by inhibition or exclusion of the pathogenic bacteria. The goal of this research was to isolate commensal, potential probiotic, bacteria from the shells of healthy looking lobsters and characterize their ability to reduce or eliminate the ESD-causing organisms. Twenty-four out of 217 isolates from lobsters were characterized as potential probiotic organisms based on their ability to inhibit the growth of putative ESD pathogens *Thalassobius sp. I31.1* or *Aquimarina macrocephali I32.4* (formerly known as *Aquimarina homaria*), ability to form strong biofilms, and their effect on

Thalassobius sp. I31.1 growth and biofilm formation. While twenty-four isolates exhibited activity against at least one of the target organisms, but only two potential probiotic organisms, *Bacillus* sp. 06-YP001, and *Pseudoalteromonas* sp. 10B-YPO11, had inhibitory activity against both pathogens. Biofilm formation on polystyrene, sterilized lobster shell fragments or glass coverslips was variable in strength across isolates. The competition assays demonstrated that four isolates, *Loktanella maritima* 06-YPC210, *Bacillus sp.* 06-YP001, *Pseudoalteromonas sp*. 03-YP014, *Pseudoalteromonas sp*. 08-YPC21, and *Phaeobacter inhibens* S4Sm were effective in reducing the growth of *Thalassobius* sp. I31.1. These results demonstrate that potential probiotic organisms can be isolated from the host (lobsters) and used to reduce growth and biofilm formation of the targeted pathogens (ESD). Looking at the interactions of the pathogens of ESD and the potential probiotics could help elucidate the cause and development of ESD.

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DEDICATION

I dedicate this thesis to my parents Carrie and Kevin Underwood. Thank you for always encouraging and supporting me through my studies.

I would also like to dedicate this thesis to Edmund Stephenson IV. Thank you for always being there for me and pushing me to always follow my passion.

PREFACE

The following thesis has been prepared in Manuscript format according to the guidelines of the Graduate School of the University of Rhode Island. This thesis contains a literature review and one manuscript in preparation to publish in BMC Microbiology.

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CHAPTER 1: Literature Review

II. Epizootic Shell Disease

Epizootic shell disease (ESD) is an emerging disease in the American lobster, *Homarus americanus*, characterized by lesions developing on the shell (5). These lesions are due to a poly-microbial infection that degrades the epicuticle layer. These lesions are different than other shell diseases because the pillars of the chitin matrix remain intact in the lesions (4), suggesting that the bacteria degrade proteins present in the epicuticle layer. The lesions of ESD are colonized by two to four times more bacterial species compared to the carapace of healthy lobsters (5). ESD is a disease of the epicuticle or carapace, although secondary systemic infections may occur among lobsters infected with ESD (4).

II.a. Carapace Structure of *H. americanus*

The *H. americanus* cuticle provides structural and protective properties to the organism (18, 20). It is composed of two layers: the epicuticle and procuticle. The epicuticle is the diffusion barrier and the procuticle is divided into the exocuticle and the endocuticle (Fig. 1).

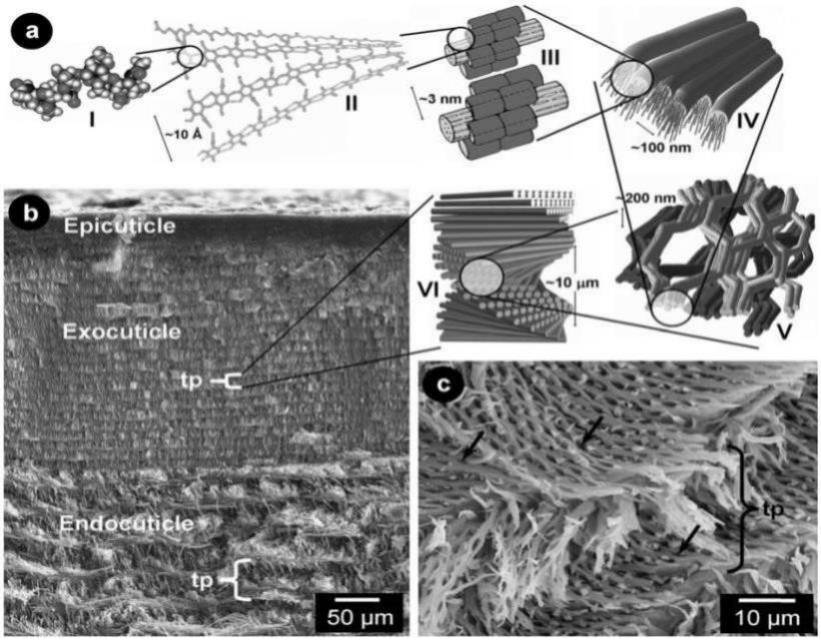

Figure 1. Romano et al. (18) describes the structure of the carapace of the *H. americanus.* The N-acetyl-glucosamine building blocks form α-chitin chains (a I & II) that bundle into nanofibrils (panel a III-V) and form the chitin fibers that make up the exocuticle and the endocuticle layer (panels b & c).

The procuticle is seen as the mechanical support for the organism (20). The cuticle is composed of a chitin matrix with protein polymers surrounding the matrix. Chitin, β-(1,4)-2-acetamido-2-deoxy-D-glucopyranose, is a main component of the cuticle. The cuticle is composed of three main minerals: calcite, amorphous calcium carbonate and carbonate-apatite. The chitin is associated with all three major mineral composites including calcium carbonate, calcite, and carbonate-apatite (20). Several polymer sequences have been analyzed and an 18-amino acid residue motif has been identified (x-L/V-I/V-G-P-S-G-I-V-T/S-X-D/N-G-x-N-I/V-Q-V/L), it is hypothesized that the N-terminal amino acid of the 18-residue motif is associated with the chitin matrix and calcium (9).

The chitin matrix has been described as a twisted plywood model (Figure 2) (19). The layers consist of stacks of helical-like chitin structures that follow a pattern

and density depending on examination of the endocuticle and exocuticle layer. Depending on which layer of the carapace is being observed the density of the chitin stacks will differ.

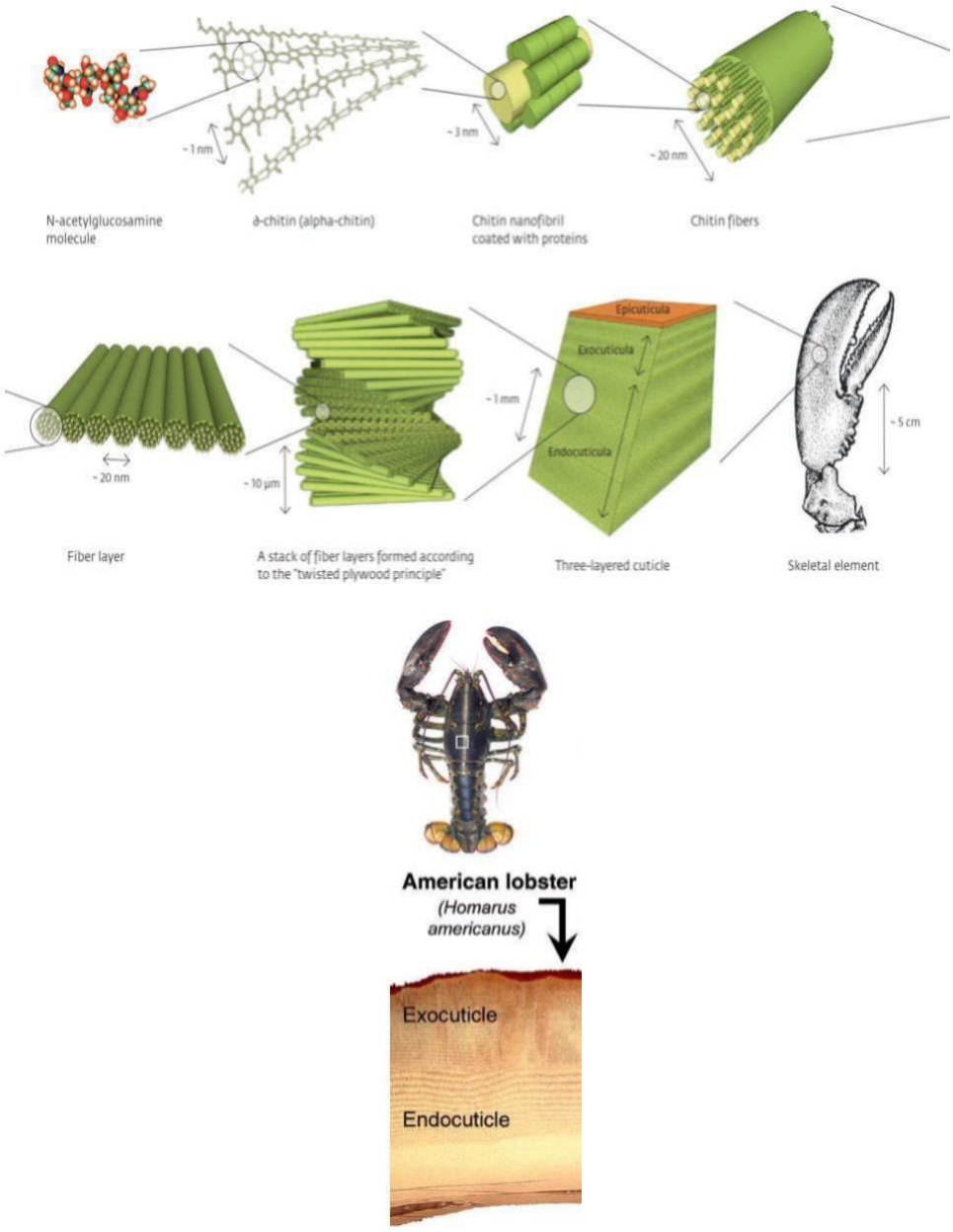

Figure 2. Stirn et al. (18) describe the structure of the lobster shell through a twisted plywood model.

The exocuticle is more compact then the endocuticle layer (20). Along with the chitin matrix the cuticle has a complex pore canal system that aids in the transportation of ions that help when the organism is developing the new exoskeleton (19, 20). For the lobster to grow, the old exoskeleton must be replaced by a new exoskeleton through the process of molting. When lobsters molt, the old exoskeleton is shed and the lobsters are unprotected until the new exoskeleton hardens. Once the new exoskeleton is formed it becomes mineralized. Mineralization gives the protective functions to the exoskeleton (19). The severity of ESD has been shown to depend on the molting time of the lobster. The longer the carapace remains infected the more severe the disease is. If the lobster recently acquired ESD and molts relatively soon after the onset of infection, the new developed exoskeleton appears to be initially disease free (3).

II.b. Epizootic Shell Disease Prevalence

ESD has increased in severity and prevalence in the wild lobster population (3). While low prevalence of ESD has been observed since the late 1980s, in 1998 the prevalence increased by ≥20% in inshore populations in Southern New England (3). New or consistent disease observations have been seen in lobster fisheries in New York, Connecticut, Rhode Island, Maine, and Massachusetts (4). There is also concern that ESD could spread to European lobster populations due to interactions with infected American lobster populations. Due to this concern, some European countries have proposed a ban on the importation of US lobsters (28)

II.c. Epizootic Shell Disease Etiology

The cause(s) responsible for the increase in ESD are not yet known. Originally, three bacterial species, *Aquimarina homaria* (2) (re-named *Aquimarina macrocephali I32.4*), *Thalassobius* sp. (2), and *Pseudoalteromonas gracilis* (5), were putatively involved in the infection resulting in ESD because they were consistently observed in lesions, even though ESD lesions have a high number of bacterial species colonizing the lesions (2). *Pseudoalteromonas gracilis* has been described as non-obligatory for the infection and *A. homaria* and *Thalassobius* sp. (2) have been demonstrated to potentially cause lesions, initiation of lesion development is not yet understood.

Lesion formation has been studied in order to better understand the initiation and progression of the disease (7, 28). One study showed a shift in the microbial population of the carapace leading to a dysbiosis. Whether the dysbiosis results from or is the cause of lesion formation is unclear (28). In another study, bacterial communities were characterized for transition and affected areas of the lobster carapace (7). It has been suggested that the altered bacterial communities between the transition and lesion areas of the lobster are important in understanding the initiation and progression of ESD (7). Using next generation sequencing, Feinman *et al*. (7) identified 170 different bacterial species associated with the lobster carapace. They demonstrated a shift in the bacterial composition between the sites of ESD lesions, 5 mm from the sites of lesions (the transition zone), and the sites with no lesion. The bacterial community at the site of the lesion is distinct and is less diverse than the community of the unaffected healthy carapace (7).

Bacteria found in this transition area may be important for initiating disease, while bacteria found in lesions may be secondary or opportunistic colonies (7). Based on differences in microbial community composition between lesions and adjacent areas, the authors hypothesize that lesions of the shell may select for specific taxa, in part due to the host response and melanization. One abundant operational taxonomic unit (OTU) found in the lesions has one hundred percent sequence identity with the genus *Aquimarina*; this OTU is not found outside of the melanized lesion (7). Another OTU of interest found in the transition microbiome and lesion microbiome is *Loktanella*. *Loktanella* may be affecting the carapace in early colonization and increasing its abundance as the disease progresses (7).

Along with bacterial species linked to ESD, several environmental conditions have been hypothesized to increase ESD prevalence and severity. Environmental factors influence the quality of the shell, which may increase the susceptibility to the likely bacterial effectors of ESD (27). Increase in water temperature has been observed in periods of increased disease prevalence. Warmer water temperatures affect shell composition by affecting the placement and growth of the cuticle (28). The bio-composites of the carapace can become thinner at warmer temperatures (28). Therefore, the shell becomes less dense and more susceptible to bacterial degradation (28).

Moreover, the marine environment is becoming more acidic and may exacerbate shell disease the proper function of the outside surface cuticle may be affected (12). Ocean acidification is the uptake of anthropogenic carbon dioxide by surface waters (10). Ocean acidification could affect the American lobster in a variety

of ways (30). With the absorption of CO_2 there is a reduction in seawater pH which reduces the calcification rates; because it depletes carbonate ions needed for the biosynthesis of calcium carbonate (10, 30). Ocean acidification could interfere with post molt calcification which is dependent on the uptake of Ca^{2+} and HCO_3^- (30). Ocean acidification could also contribute to increased rates of calcium carbonate dissolving from the existing carapace (12). Kepple et al. (12) performed a study with *Homarus americanus* larvae examining the effects of ocean acidification on growth. Larvae exposed to lower pH seawater demonstrates a decreased growth rate and, consequently, a longer amount of time between molting stages. It is hypothesized that the larvae may be redirecting energy to maintain mineralization of the calcified carapace (12).

Genetic differences among lobster populations are suspected to affect disease prevalence. This is observed in the varying disease progressions in the Eastern Long Island Sound and the Western Long Island Sound lobster populations. The western populations were affected by a bottleneck due to higher amounts of pollution and were influenced by selective pressures becoming genetically different when compared to the Eastern populations (2). The Eastern Long Island Sound population is more susceptible to ESD. Contaminants from metals; arsenic, cobalt, copper, and cadmium appear to be linked to ESD prevalence (21). Additionally, diet of the lobster population may influence susceptibility to ESD, as certain foods, such as Atlantic herring, in lobster traps has been connected to observations of increased lesion formation (22). Lobsters in a laboratory setting fed only a herring diet hadincreased

shell disease. After testing lobsters in the wild, herring was determined to be a limited food source and demonstrated no increase in shell disease (22).

Although the primary cause of ESD is unknown, colonization by bacteria such as *Aquimarina macrocephali I32.4*, *Thalassobius* sp., or *Loktanella* spp. most probably play a role in disease pathogenesis and lesion progression. I propose that probiotic bacteria may be able to influence the progression of ESD by: 1) prevention of the initial colonization by the pathogen/s and 2) the reduction of polymicrobial community that enhances the ESD lesions.

II.d. *Homarus americanus* reaction to Epizootic Shell Disease

After initiation of the disease the physical response of the *H. americanus* begins with the calcite dissolution response. Melanization of the lesion occurs slowly over time, as shown by measurements of oxygen utilization by the lesion (Kunkel et al. 2012). Melanization of the cuticle is proposed to play a role in stabilizing the lesion by cross-linking the cuticle proteins. The cross-linking of cuticle proteins may slow or stop microbes from further progression in the cuticle (13).

There is also a molecular response to disease initiation. Gene expression data demonstrated disruption of molting (based on differential expression of the

ecdysteroid response gene), muscular function (arginine kinase) and xenobiotic metabolism (CYP45) in lobsters with ESD (27). Gene expression profiles are consistent with the observation that intermolt duration in lobsters with ESD has been shown to be shortened, suggesting that molting appears to be a defense mechanism against the disease allowing lobsters to shed the infected cuticle before internal damage ensues (27).

II.e. Probiotic use in shellfish

Probiotics have been used to treat or prevent a variety of diseases found in shellfish. Probiotics have been shown to competitively exclude pathogenic bacteria, produce inhibitory compounds, improve water quality and other effects as well (14).

Isolation of probiotic organisms from hosts we are trying to protect have been done with some success in the past, such as oysters (29), crabs, and fish. The probiont *P. inhibens* S4Sm, previously isolated from the inner shell surface of a healthy oyster, has been demonstrated to provide protection to oysters challenged with the oyster pathogens *V. coralliilyticus* RE22 and *Aliiroseovarius crassostreae* (11, 29). Mouriño et al. (15) isolated potential probiotic bacteria from the foregut of the South American catfish hybrid, *Pseudoplatystoma reticulatum* × *Pseudoplatystoma corruscans* to identify bacteria that were antagonistic to the selected pathogen, *Aeromanas hydrophila,* and were able to colonize the intestinal tract of the hybrid. The probiotic bacteria were selected through a zone of inhibition test then tested in vivo. The isolates isolated from the foregut did prove able to colonize the intestine and provide protection against *A. hydrophila* (15). Nogami et al. (16) isolated bacteria from the crustacean culturing pond to isolate potential probiotic bacteria to protect *Portunus*

trituberculatus (Japanese blue crab or horse crab) larvae. They isolated one strain identified as PM-4, which improved larvae growth and reduced the growth of *Vibrio anguillarum* (16). The results above show that the microbiome of a healthy host may be a source of successful probiotic organisms

Larval mollusks are vulnerable to infections in hatcheries. Probiotics can be used to prevent or treat disease outbreaks in aquaculture (1). *Phaeobacter inhibens* S4 and *Bacillus pumilus* RI06-95 have been successfully used to prevent larval oyster mortality and give protection to the eastern oyster *Crassostrea virginica* against challenge with the bacterial pathogens *Vibrio coralliilyticus* RE22 and *Aliiroseovarius crassostreae* (11). The probiotic treatment was also effective in reducing mortalities in bay scallops (*Argopecten irradians)*, but not in razor clams (*Ensis directus)*, blue muscles (*Mytilus edulis)* and northern quahog (*Mercenaria mercenaria*). The data suggest that the two-probiotic species (*Phaeobacter inhibens* S4 and *Bacillus pumilus*) used have a species-specific protective effect for bivalve larvae (25). Since it is likely that this species-specific protective effect is common for all probiotics, specific probiotic organisms will have to be discovered for the treatment of specific infectious diseases in specific host organisms. This is because the host has different pathogen susceptibilities along with different defense mechanisms. The probiotics also benefit the hosts through different mechanisms such as improving water quality, production of antimicrobial compounds, competition with pathogenic bacteria and stimulation of immune response.

Middlemiss et al. (14) studied with the effects of a probiotic *Bacillus* spp. against a pathogenic *Vibrio* spp. in European lobsters. Using a semi-closed

recirculating system, they treated the lobsters by adding the probiotic *Bacillus* spp. to the tank water. They also treated the lobsters separately with UV light and O_3 and then compared the effects of the different treatments on the reduction of *Vibrio spp.* (14). The bacteriology results were determined for each water treatment. The *Bacillus* spp. conferred no health benefits in growth, survival or fitness when compared to the other treatments used. The O_3 and UV treatment tanks showed 0.05% of the total CFU to be *Vibrio* spp. (14), suggesting that the O_3 and UV treatment may reduce the normal bacterial flora and create a shift in the bacterial community. This shift in the bacterial community could allow for opportunistic bacteria to take advantage of the change in the community and out compete the normal bacterial flora. This shift in the bacteria community could aid in the successful establishment of the pathogen, generating a more harmful outcome from the treatment. When investigating a treatment for any host it is important to understand the implications the treatment may have on the host and the water quality or habitat.

Talib et al. (26) studied the effect of a multispecies *Bacillus* culture on the survival of mud crabs (*Scyla paramosain*) in hatcheries. *S. paramosain* face large mortalities with bacterial diseases, in hatcheries (26). This study was used to determine if a multispecies *Bacillus* culture would be effective in increasing the survival rate of mud crabs in hatcheries. The effectiveness of the probiotic treatment was determined based on survival rate (26). Higher concentrations of the *Bacillus* showed higher survival rates in the hatcheries, demonstrating that culture concentration can influence the success of the probiotic treatment administered (26).

In the literature, there are many examples of probiotics being used to treat shellfish. These examples can give investigators some general ideas about what should be considered when selecting a probiotic for the treatment of ESD. The microbiome of a healthy host may be a source of potential probiotic bacteria. When selecting a probiotic for the treatment of ESD we will look for a species-specific protective effect, but since ESD is a polymicrobial infection it may require more than one probiotic. With the probiotic treatment, there is a need to understand the implications the treatment may have on the host, water quality, and possibly the habitat. We also must consider the concentration at which we treat the lobsters since it could affect the success of the probiotic treatment.

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CHAPTER 2: ISOLATION AND IDENTIFICATION OF PROBIOTIC BACTERIA FOR THE MANAGEMENT OF EPIZOOTIC SHELL DISEASE

III. Introduction

Epizootic shell disease (ESD) is a polymicrobial infection that causes lesions in the carapace and claws of the shell of the American lobster, *Homarus americanus* (2). These lesions are an asymmetrical degradation of the carapace appearing in a black to tan color. ESD varies from other shell diseases found in American lobster populations because it does not degrade the chitin pillars of the cuticle of the shell (15). The unsightly appearance of the carapace due to the lesions has greatly impacted the lobster fisheries in Southern New England, since fishers are not able to sell affected lobsters to the more lucrative live market (4).

Lobster ESD, first observed in the late 1980's, has increased in prevalenceand has expanded its range along the east coast of the United States. Currently, ESD has a high prevalence in eastern Long Island Sound and inshore RI waters (Narragansett Bay) with small outbreaks recorded in Maine and Northern Massachusetts (3,7). In 2012, it was reported that ≥20% of inshore lobsters show evidence of this affliction (3). Further, it was estimated in 2012, that the prevalence of ESD in lobsters found in RI inshore waters was 10-40% (7). Moreover, it is estimated that 50-80% of ovigerous females have ESD (7). Females afflicted with ESD may fail to reproduce because molting frequency increases with the severity of ESD and molting will result in the loss of the entire clutch of eggs. Alternatively, ovigerous females with ESD may they retain the shell and die before the eggs are ready (7). The increase in ESD

within the New England lobster population has become a concern for its effects on the health of the lobsters and ultimately the economic health of the fishery.

Probiotics are microorganisms that when administered in certain amounts can confer a health benefit to the host (1). It has been shown that probiotics are an effective way to prevent infectious diseases in a variety of animals, including fish and shellfish, by inhibition or exclusion of the pathogenic bacteria and other mechanisms (1). We suggest that, probiotic organisms are a potential way to prevent or slow the progression of ESD. It has been previously demonstrated that lobsters have a diverse commensal microbial community that colonizes the lobster carapace. We hypothesize that commensal bacterial that colonize the shell of healthy looking lobsters can be a source of probiotic organisms that may be used to reduce or eliminate ESD-causing organisms from the lobster shell, reducing or stopping the progression of ESD.

IV. Methods

IV.a. Bacterial strains and growth conditions

Bacterial species routinely grown included *Aquimarina macrocephali* I32.4, *Thalassobius* sp. I31.1, and the 24-selected potential probiotic isolates (Table 1). Both *A. macrocephali* I32.4, *Thalassobius sp. I31.1* and the selected potential probiotic isolates were grown in 50 mL polypropylene culture tubes, with shaking, at room temperature (23˚C) in YP30IOS [10 g peptone, 2 g yeast, 60 g of Instant OceanSalt™ (Instant Ocean Spectrum Brands, Blacksburg, Virginia) and 30 g agar, dissolved in 1 L deionized (DI) water, pH 7.0]. A spontaneous streptomycin-resistant (Sm^r) strain of *Loktanella maritima* 06-YPC211 was selected by spread plating 200 µl of an overnight culture of *L. maritima* 06-YPC211 on YP30IOS Sm (200 µg/mL streptomycin) plates and selecting a streptomycin-resistant colony after the plates had been incubated at 23˚C for 24 hours. This streptomycin-resistant strain was designated *L. maritima* 06-YPC211Sm. All streptomycin resistant strains including *L. maritima* 06-YPC210Sm, *Pseudoalteromonas* sp. 03-YP014Sm, *Pseudoalteromonas* sp. 08-YPC21Sm, and *Bacillus* sp. 06-YP001Sm were selected through the same process. *P. inhibens* S4Sm is a spontaneous streptomycin resistant mutant selected for a previous study (23).

Table 1. Bacterial species and strains used in this study

Strains	**Description**	**Reference**
P. inhibens S4Sm	Spontaneous Sm^r mutant of *P. inhibens* S4	Zhao et al. 2016 (24)
Loktanella maritima 06-YPC210Sm	Spontaneous Sm^r mutant of *L. maritima* 06-YPC210	this study
Loktanella maritima 06-YPC211Sm	Spontaneous Sm^r mutant of *L. maritima* 06-YPC211	this study
Pseudoalteromonas sp. 03-YP014Sm	Spontaneous Sm^r mutant of *Pseudoalteromonas* sp. 03-YP014	this study
Pseudoalteromonas sp. 08-YPC21Sm	Spontaneous Sm^r mutant of *Pseudoalteromonas* sp. 08-YPC21	this study
Bacillus sp. 06-YP001Sm	Spontaneous Sm^r mutant of *Bacillus* sp. 06-YP001	this study
Thalassobius sp. I31.1	Isolated putative pathogen of ESD	Christoserdov et al. 2005
Thalassobius sp. I31.1Ap	*Thalassobius* (pBBR1MCS4, Ap^r)	this study
A. macrocephali I32.4	Isolated putative pathogen of ESD	Christoserdov et al. 2005
V. anguillarum NB10	Wild type, serotype 01, clinical isolate form the Gulf of Bothnia	Norqvist et al. 1989 (14)
Pseudoalteromonas sp. 08-SWC22	Isolated from the swab of a lobster lesion on the cephalothorax	this study
Pseudoalteromonas sp.08-YPC21	Isolated from the swab of a lobster lesion on the cephalothorax	this study
Pseudoalteromonas sp. 08-SWC21	Isolated from the swab of a lobster lesion on the cephalothorax	this study
Pseudoalteromonas sp.03-YP014	Isolated from the swab of a lobster tail fin	this study
Pseudoalteromonas sp.02-YP012	Isolated from the swab of the top of the lobster abdomen	this study
Pseudoalteromonas sp. 06-YPC22	Isolated from the swab of the lobster underside between the walking legs, egg bearing	this study
Pseudoalteromonas sp. 06-YPC21	Isolated from the swab of the lobster underside between the walking legs, egg bearing	this study
Pseudoalteromonas sp.09-YP018	Isolated from the swab of the	this study

	lobster cephalothorax left side	
Pseudoalteromonas sp. 09-YPC25	Isolated from the swab of the lobster cephalothorax left side	this study
Pseudoalteromonas sp. 09-YPC23	Isolated from the swab of the lobster cephalothorax left side	this study
Pseudoalteromonas sp.09-YPO19	Isolated from the swab of the lobster cephalothorax left side	this study
Pseudoalteromonas sp.10B-YPO11	Isolated from the swab of the top of the lobster abdomen	this study
Pseudoalteromonas sp.09-YPC29	Isolated from the swab of the lobster cephalothorax left side	this study
Pseudoalteromonas sp. 06-SWC23	Isolated from the swab of the lobster underside between the walking legs, egg bearing	this study
Pseudoalteromonas sp. 02-YPC22	Isolated from the swab of the top of the lobster abdomen	this study
Pseudoalteromonas sp. 11-YP013	Isolated form the swab of the top of the lobster abdomen	this study
Pseudoalteromonas sp.11-YPC25	Isolated form the swab of the top of the lobster abdomen	this study
Pseudoalteromonas sp. 09-YP001	Isolated from the swab of the lobster cephalothorax left side	this study
Pseudoalteromonas sp.11-YP016	Isolated form the swab of the top of the lobster abdomen	this study
Bacillus sp. 06-YP001	Isolated from the swab of the lobster underside between the walking legs, egg bearing	this study
Loktanella maritima 06-YPC210	Isolated from the swab of the lobster underside between the walking legs, egg bearing	this study
Loktanella maritima 06-YPC211	Isolated from the swab of the lobster underside between the walking legs, egg bearing	this study
Cobetia sp. 10B-YPC21	Isolated from the swab of the top of the lobster abdomen	this study
Alteromonas sp. 03-YPC23	Isolated from the swab of a lobster tail fin	this study

IV.a.1. Isolation of probiotic bacteria:

Probiotic organisms that show inhibitory activity against the putative pathogens *A. macrocephali* I32.4 (5), and *Thalassobius* sp. I31.1(2) were isolated from live lobsters (Table 1). Other sources used to isolate potential probiotic organisms included crab shell scrapings and various water samples. However, no probiotic bacteria were isolated from these samples. Live lobsters were collected off the coast of Fort Wetherill, RI by collaborating lobstermen. Lobster carapaces were washed with 3% Instant Ocean Salt™ in deionized water and then swabbed using a sterile cotton swab. Swabs were placed in sterile seawater, vortexed for one minute and stored at 4º C. Collected samples were diluted 10-fold and 100-fold with sterile, 3% Instant Ocean Salt™ (Instant Ocean Spectrum Brands, Blacksburg, VA) in deionized water. The dilutions were plated on three types of media: YP30IOS, YP30IOS plus 2% chitin, and sterile 3% Instant Ocean Salt in deionized water plus 2% chitin. The use of a variety of media allowed for the selection of a more diverse group of microorganisms from the collected samples. The plates were screened for unique colonies. Isolates were placed in 20% glycerol and stored at -80º C for future characterization.

IV.b. Characterization of probiotic bacterial isolates

IV.b.1. Zone of inhibition assay:

A zone of inhibition (ZOI) assay was used to test the initial lobster isolates against the two putative pathogens (24). Target organisms, *A. macrocephali* I32.4, or *Thalassobius* sp. I31.1, grown to stationary phase were spread plated (100 µl) onto YP30IOS plates. After the plates had dried, 10 µl of the candidate probiotic organism

were spotted plated in triplicate, incubated at room temperature and observed at 24 h and 48 h for ZOI. The ZOI were measured from the edge of the isolate colony to the edge of growth of the target organism. Three biological replicates were performed for each lobster isolate. Bacterial isolates exhibiting a ZOI were saved for further study.

IV.b.2. Crystal violet biofilm formation assay:

Biofilm formation by the lobster isolates probiotics were determined by using a modification of the crystal violet staining method (2). All isolates were incubated in a polystyrene 96-well plate for 24 h at room temperature. After incubation, the culture liquid was removed and each well was gently washed with 3% ASW to remove any loose, non-adhering cells. Cells attached to the well were stained with crystal violet for 20 min. Excess dye was washed and removed with 3% ASW. Crystal violet bound to the biofilm was eluted with 95% ethanol for 30 min. The optical density of the eluted crystal violet was measured at 580 nm (OD_{580}) by spectrophotometry. The resulting OD_{580} reading is a measurement of biofilm formation. Since we were interested in strong biofilm forming isolates and previous work demonstrated that *P. inhibens* S4Sm is a strong biofilm former (24) with an OD_{580} ~4.0, lobster isolates withOD_{580} >3 were selected for further testing.

IV.b.3. Identification of isolates by 16S rRNA gene sequencing:

Candidate probiotic isolates were identified by the use of 16S rRNA gene (rDNA) sequencing. Genomic DNA was isolated from the potential probiotic isolates using the Bio Basic Inc. EZ-10 Spin Column Genomic DNA Minipreps Kit (Bio Basic Inc., Amherst, New York). PCR was used with 16S rDNA primers 27F (5'-AGAGTTTGATCCTGGCTCAG-3') and 1525R (5'AAGGAGGTGWTCCARCC-

3') (18). PCR reactions were set up with 2 µl of genomic DNA (gDNA) at a concentration of 10-60 ng/µl, 2 µl of the forward and reverse primer (each at a concentration of 10 µM), 19 µl nuclease-free water, and 25 µl of QIAGEN™ *Taq* PCR Master Mix (Qiagen™, Waltham, MA) for a 50 µl reaction. PCR conditions were: initiation, 95°C for 2 min, followed by 35 cycles of denaturation, 94°C for 15 s, annealing, 53°C for 30 s, and elongation, 72°C for 1.5 min; and a final extension at 72°C for 5 min. The generated sequences were analyzed through BLASTn (8), sequencing of the 16S rDNA amplicons gave genus level identification. The sequencing was performed at the Rhode Island Genomics and Sequencing Center.

IV.b.4. Determination of protease and chitinase activity

Agar plate assays was used to determine the casein protease and gelatin protease activities, and also the chitinase activity of the selected candidate probiotic isolates and the two putative lobster pathogens. Casein plates were made by combining YP30IOS with a 10% casein solution (125 mL of DI water with 12.5 g of casein). Gelatin plates were made by combining YP30IOS with a 10% gelatin solution (125 mL of DI water with 12.5g of gelatin) solution. Colloidal chitin plates were made by combing a 1% colloidal chitin solution (125 mL of DI water with 1.25g ofcolloidal chitin) with YP30IOS. Colloidal chitin was prepared by the method by Rodrigues-Kabana et al. (14).

To test for protease activity, the candidate probiotic isolates and putative pathogens were grown overnight and 10 µl of the cultures were spot plated in triplicate on both casein and gelatin plates. The casein and gelatin plates were incubated at 25º C

for 24 hours and then observed for a zone of clearing around each colony spot. To test for chitinase activity, 10 µl of overnight cultures of the organisms to be tested were spotted in triplicate onto colloidal chitin plates and incubated for seven days at 25º C. The casein and colloidal chitin plates were observed directly for a zone of clearing around the spotted colonies. In order to observe a zone of clearing on the gelatin agar plates a 20% HCl solution was added to cover the agar surface to precipitate unhydrolyzed gelatin (22).

IV.c. Lobster shell and glass coverslip biofilm assays

The glass coverslip biofilm assay developed by Zhao et al. (24) was used and also modified to use lobster shells as an alternative to glass coverslips. To prepare the lobster shell for the assay, lobster molts that were frozen and collected from lobsters kept in aquarium at the Graduate School of Oceanography, were cut into 2 cm × 2 cm squares. The squares were placed individually in 50 mL falcon tubes containing 25 mL of 3% hydrogen peroxide for 24 hours. After 24 hours, the lobster shells were placed into six well plates containing 6 mL of sterile 3% ASW and were placed on a shaker for 2 minutes; this wash step was repeated twice. After the lobster shells were sterilized the biofilm assay was setup as described by Zhao et al. (24).

A competition assay developed by Zhao et al. (24) was used to determine the cell density of biofilms in pure and two-membered mixed cultures. The two-membered mixed culture competition assays allowed us to determine whether the candidate probiotic organisms would effectively reduce the density of the putative pathogens (*Aquimarina macrocephali I32.4 or Thalassobius sp. I31.1)* colonizing the lobster shell. Candidate probiotic cells were grown for 24 h to stationary phase. 60 µl

Cultures at a concentration of ~4.0×10^6 CFU/ml were transferred into 6-well plates containing glass coverslips and 6 ml of YP30IOS. After 24 h of incubation at room temperature, coverslips were washed in 3% ASW and each coverslip was transferred into a fresh well containing 6 ml of YP30IOS supplemented with a culture of the putative pathogens, 60 µl at a concentration of 4.0×10^6 CFU/ml. After 24 h of incubation the coverslips were washed with 3% ASW and placed into new wells with 6 ml of YP30 and incubated. Cover slips were removed at each sampling time. Coverslips were used to determine cell density of the strains as described by Zhao et al. (24). To determine the CFU/coverslip in mixed cultures, each organism had a different antibiotic resistance to allow differential plating on YP30 plates containing the appropriate antibiotic. All candidate probiotics were streptomycin resistant and *Thalassobius sp. I31.1*was ampicillin resistant.

IV.d. Lobster shell assay

Molted lobster carapaces were acquired from local lobstermen and from previously held experimental lobsters provided by Dr. Kathy Castro. The lobster carapace was cut into 2 cm × 2 cm pieces. Each cut lobster piece was sterilized individually in 15 mL of 3% hydrogen peroxide for 24 hours. After 24 hours, the lobster pieces were washed twice by shaking in a 6-well plate with 6 mL of sterile 3% ASW. After the two washes, the lobster pieces were placed in a 6-well plate with 3 mL of 3% ASW and 3 mL of YP30IOS. Each well was inoculated with 60 µl of an overnight culture of *A. macrocephali I32.4* or *Thalassobius sp. I31.1* and incubated at 27ºC. Photographs were taken at pre-and post-sterilization and once a week for six weeks to track the appearance of the lobster shell pieces as the putative pathogens

colonize the lobster shells in order to determine if the putative pathogens have a visual effect on the lobster carapace.

IV.e. Statistical Analysis

Statistical significance of the effect of the different probiotics on pathogen inhibition, biofilm formation, and competition with *Thalassobius* sp. was tested using one way ANOVA, Kruskal-Wallis and Post-Hoc tests such as the Tukey's Honest Significance Test (THS). Data with $p<0.05$ were considered statistically significant.

V. Results:

V.a.1. Zone of inhibition assay:

With 217 bacterial isolates selected from live lobster sampling, it was necessary to determine which of the isolates could be effective as probiotics against the putative pathogens of ESD. The results of the ZOI assay (Table 2) identified 24 isolates that exhibited activity against at least one of the target organisms, only two isolates, *Bacillus* sp. 06-YP001 and *Pseudoalteromonas* sp. 10B-YPO11 inhibited the growth of both *Thalassobius* sp. I31.1 and *A. macrocephali* I32.4. Further, the assay revealed that two other isolates, *Pseudoalteromonas* sp. 09-YP018, and *Cobetia* sp. 10B-YPC21, exhibited inhibitory activity only against *A. macrocephali* I32.4 with no inhibition of *Thalassobius* sp. I31.1 growth. The remaining 20 isolates inhibited growth of only *Thalassobius sp.* I31.1 (Table 2). Additionally, *Vibrio anguillarum* NB10 (a pathogen of fish and crustaceans) was used as another test pathogen. Only three isolates inhibited the growth of *V. anguillarum* NB10, *Pseudoalteromonas* sp.09-YPC25, *Pseudoalteromonas* sp. 09-YPC23, *Pseudoalteromonas* sp. 09-YPC29 (Table 2). One way ANOVA was conducted to compare the effects of the selected isolates on three pathogens. The ANOVA analysis of ZOI against *V. anguillarum* NB10 indicated significant difference between isolates [$p<0.0001$, $F(23,48) = 132.56$]. The Tuckey Honest Significant Difference Test shows that *Pseudoalteromonas* sp. 09-YPC25 (q=25.56), *Pseudoalteromonas* sp. 09-YPC23 (q=49.566) and *Pseudoalteromonas* sp. 09-YPC29 (q=16.80) ZOI against *V. anguillarum* were significantly higher than all the other isolates (Appendix 4). The ANOVA analysis of ZOI against

Aquimarina macrocephali 132.4 also confirmed significant differences between isolates (p<0.0001, F (23,48) = 165.96), with four isolates that were significantly different from the other isolates ZOI: *Pseudoalteromonas* sp. 09-YP018 (q=36.51, Tukey's HSD), *Pseudoalteromonas* sp. 10B-YPO11 (q=69.38), *Bacillus* sp. 06-YP001 (q=94.94) and *Cobetia* sp. 10B-YPC21 (q=47.47) (Appendix 5). More isolates showed activity against *Thalassobius* sp. I31.1 than against the other two pathogens tested. The ANOVA analysis of ZOI against *Thalassobius* sp. I31.1 also indicated significant differences between certain isolates (p<0.0001, F (23,48) = 50.08) (Appendix 6). The isolate *Pseudoalteromonas* sp. 09-YP001 showed significantly higher activity than all other isolates, with *Pseudoalteromonas* sp. YP014, YP012, YP016, *Bacillus* sp. 06-YP001 and *Loktanella maritima* YPC210 showing higher activity than most other isolates. These twenty-four isolates selected for their ZOI were saved for further characterization.

Table 2. Inhibitory activity of lobster isolates against target pathogens.

Isolate Identification	**Average ZOI[a] ±S.D. (mm) against *Thalassobius sp.* I31.1**	**Average ZOI[a] ±S.D. (mm) against *A. macrocephali* I32.4**	**Average ZOI[a]±S.D. (mm) against *V. anguillarum* NB10**
Pseudoalteromonas sp. 08-SWC22	**1±0**	**0±0**	**0±0**
Pseudoalteromonas sp. 08-YPC21	**1.2±0.3**	**0±0**	**0±0**
Pseudoalteromonas sp. 08-SWC21	**1.2±0.3**	**0±0**	**0±0**
Pseudoalteromonas sp. 03-YP014	**2.5±0.5**	**0±0**	**0±0**
Pseudoalteromonas sp. 02-YP012	**2±0**	**0±0**	**0±0**
Pseudoalteromonas sp. 06-YPC22	**1.8±0.3**	**0±0**	**0±0**
Pseudoalteromonas sp. 06-YPC21	**1.7±0.3**	**0±0**	**0±0**
Pseudoalteromonas sp. 09-YP018	**0±0**	**1.6±0.3**	**0±0**
Pseudoalteromonas sp. 09-YPC25	**0±0**	**0±0**	**1.2±0.4**
Pseudoalteromonas sp. 09-YPC23	**0±0**	**0±0**	**2.3±0.3**
Pseudoalteromonas sp. 09-YPO19	**0.6±0.2**	**0±0**	**0±0**
Pseudoalteromonas sp. 10B-YPO11	**1.6±0.3**	**3.1±0.3**	**0±0**
Pseudoalteromonas sp. 09-YPC29	**0±0**	**0±0**	**0.8±0.1**
Pseudoalteromonas sp. 06-SWC23	**<1±0**	**0±0**	**0±0**
Pseudoalteromonas sp. 02-YPC22	**2±0.06**	**0±0**	**0±0**
Pseudoalteromonas sp. 11-YP013	**<1±0**	**0±0**	**0±0**
Pseudoalteromonas sp. 11-YPC25	**<1±0.23[b]**	**0±0**	**0±0**
Pseudoalteromonas sp. 09-YP001	**4.3±0.6[*]**	**0±0**	**0±0**
Pseudoalteromonas sp. 11-YP016	**2.2±0.3**	**0±0**	**0±0**
Bacillus sp. 06-YP001	**2±0**	**4.3±0.6**	**0±0**
Loktanella maritima 06-YPC210	**2±0**	**0±0**	**0±0**
Loktanella maritima 06-YPC211	**1.7±0.6**	**0±0**	**0±0**
Cobetia sp. 10B-YPC21	**0±0**	**2.2±0.3**	**0±0**

[a]ZOI measurements are read (24 h, 25 °C) from the edge of the spotted candidate probiotic colony to the edge of pathogen growth. All values are the average of six ZOI measurements.[b]ZOI determined after 5 d. [*]Significantly higher than all other isolate.

V.b.2. Identification of isolates by 16S rRNA gene sequencing:

The 24 probiotic candidates were identified by 16S rRNA gene (16S rDNA) sequencing. The length of the PCR amplified 16S rDNA sequences is approximately 1000 base pairs (2). The results obtained from sequencing the 16S rDNA from the various isolates permitted identification of all 24 isolates to the genus level (Table 3). One genus dominated with 19 of 24 (79%) isolates identified as a member of *Pseudoaltermonas*. It is not clear from 16S rDNA sequencing how many of these 19 isolates are unique or identical species. Additionally, two isolates were identified as *L. maritima*. Both were isolated from egg clusters on female lobsters.

The remaining three isolates were identified as *Alteromonas, Cobetia,* and *Bacillus*. Many of these isolates are known in the literature for producing anti-microbial compounds. *Pseudoaltermonas* are commonly found in association with marine eukaryotes and have been shown to have anti-bacterial, bacteriolytic and algicidal properties (8). *Bacillus subtilis* are known to produce at least 12 antibiotics (19).

Table 3. Identification of lobster isolates by 16S rRNA gene sequencing.

Isolate Identification	Classification by16S rRNA Gene Sequencing[a]	Renamed Isolate Identification
HA08115126SWC22	*Pseudoalteromonas* sp.	*Pseudoalteromonas* sp. 08-SWC22
HA081151216YPC21	*Pseudoalteromonas* sp.	*Pseudoalteromonas* sp.08-YPC21
HA081151216SWC21	*Pseudoalteromonas* sp.	*Pseudoalteromonas* sp. 08-SWC21
HA031151216YP014	*Pseudoalteromonas* sp.	*Pseudoalteromonas* sp.03-YP014
HA021151216YP012	*Pseudoalteromonas* sp.	*Pseudoalteromonas* sp.02-YP012
HA061151216YPC22	*Pseudoalteromonas* sp.	*Pseudoalteromonas* sp. 06-YPC22
HA061151216YPC21	*Pseudoalteromonas* sp.	*Pseudoalteromonas* sp. 06-YPC21
HA091151216YP018	*Pseudoalteromonas* sp.	*Pseudoalteromonas* sp.09-YP018
HA091151216YPC25	*Pseudoalteromonas* sp.	*Pseudoalteromonas* sp. 09-YPC25
HA091151216YPC23	*Pseudoalteromonas* sp.	*Pseudoalteromonas* sp.. 09-YPC23
HA091151216YPO19	*Pseudoalteromonas* sp.	*Pseudoalteromonas* sp.09-YPO19
HA10B1151216YPO11	*Pseudoalteromonas* sp.	*Pseudoalteromonas* sp.10B-YPO11
HA091151216YPC29	*Pseudoalteromonas* sp.	*Pseudoalteromonas* sp.09-YPC29
HA061151216SWC23	*Pseudoalteromonas* sp.	*Pseudoalteromonas* sp. 06-SWC23
HA021151216YPC22	*Pseudoalteromonas* sp.	*Pseudoalteromonas* sp. 02-YPC22
HA111151216YP013	*Pseudoalteromonas* sp.	*Pseudoalteromonas* sp. 11-YP013
HA111151216YPC25	*Pseudoalteromonas* sp.	*Pseudoalteromonas* sp.11-YPC25
HA091151216YP001	*Pseudoalteromonas* sp.	*Pseudoalteromonas* sp. 09-YP001
HA111151216YP016	*Pseudoalteromonas* sp.	*Pseudoalteromonas* sp.11-YP016
HA061151216YP001	*Bacillus* sp.	*Bacillus* sp. 06-YP001

HA061151216YPC210	*Loktanella maritima*	*Loktanella maritima* 06-YPC210
HA061151216YPC211	*Loktanella maritima*	*Loktanella maritima* 06-YPC211
HA10B1151216YPC21	*Cobetia* sp.	*Cobetia* sp. 10B-YPC21
HA031151216YPC23	*Altermonas* sp.	*Altermonas* sp. 03-YPC23

[a]Degenerate primers used were: 27F (5'-AGAGTTTGATCCTGGCTCAG-3') and 1525R (5'AAGGAGGTGWTCCARCC-3'). The generated sequences were analyzed through BLASTn (8). The 16S rRNA gene sequences are shown in Appendix #1.

V.b.3. Crystal violet biofilm formation assay:

It was hypothesized that if a potential probiotic organism is a strong biofilm former then it may exhibit a stronger probiotic effect in at least two ways: 1) by colonizing the lobster shell and physically preventing the attachment of potential pathogens to the carapace and 2) producing antibiotic substances on the lobster host, thus preventing colonization by the pathogens**.** The 24 isolates selected from the zone of inhibition assay were characterized for their ability to form biofilms on polystyrene. A control biofilm former, *P. inhibens* S4Sm was also examined using this method.

P. inhibens S4Sm is known to be a strong biofilm former exhibiting an OD_{580} values of 3.8-4.0 using the crystal violet method (22). Our data measured *P. inhibens* S4Sm with an OD_{580} reading of 3.89 matching previously reported data (22). The crystal violet biofilm assay results demonstrate that the twenty-four selected probiotic isolates had a range of OD_{580} measurements from 1.33-3.71 (Table 4). One way ANOVA was conducted to compare the strength of biofilm formation by the selected isolates. The ANOVA analysis of OD_{580} measurements were significantly different [$p=0.0001$, $F(24,50)= 40.25$]. The isolates showing significantly higher OD_{580} measurements than all other isolates were *P. inhibens* S4Sm, *Pseudoalteromonas* sp. 06- YPC22, *Loktanella maritima* 06-YPC210, and *Loktanella maritima* 06-YPC211. *Pseudoalteromonas* sp. 06-YPC22 and *Pseudoalteromonas* sp. 11-YP016 showed significantly lower OD_{580} than all other isolates (Appendix 7). Some of the selected probiotic candidate isolates are strong biofilm formers (OD_{580} >3.5), while others are

weaker biofilm formers on polystyrene. Isolates were ranked based on ability to inhibit pathogen growth and ability to form biofilms. Five isolates showing:1) larger zones of inhibition (2-4.3 mm), 2) higher crystal violet biofilm (on polystyrene) OD_{580} measurements (2.88- 3.71), and 3) from a diversity of genera (*Bacillus*, *Loktanella*, and *Pseudoalteromonas*) were selected for further testing, including ability for biofilm formation on glass coverslips and sterilized lobster molts (Section V.b.4. below) and candidate probiotic-pathogen competition assays (Section V.c. below).

Table 4. Biofilm formation determined by crystal violet measurements of lobster isolates

Isolate Identification	**Biofilm Measurement (OD_{580} ±S.D.) [a]**
Pseudoalteromonas sp. 08-SWC22	3.57±0.02
Pseudoalteromonas sp. 08-YPC21	2.55±0.10
Pseudoalteromonas sp. 08-SWC21	2.18±0.40
Pseudoalteromonas sp. 03-YP014	3.24±0.23
Pseudoalteromonas sp. 02-YP012	3.17±0.27
Pseudoalteromonas sp. 06-YPC22	3.71±0.0
Pseudoalteromonas sp. 06-YPC21	3.12±0.0
Pseudoalteromonas sp. 09-YP018	2.89±0.03
Pseudoalteromonas sp. 09-YPC25	2.79±0.03
Pseudoalteromonas sp. 09-YPC23	2.71±0.12
Pseudoalteromonas sp. 09-YPO19	2.86±0.04
Pseudoalteromonas sp. 10B-YPO11	3.32±0.18
Pseudoalteromonas sp. 09-YPC29	3.05±0.03
Pseudoalteromonas sp. 06-SWC23	2.43±0.25
Pseudoalteromonas sp. 02-YPC22	2.04±0.06
Pseudoalteromonas sp. 11-YP013	2.53±0.01
Pseudoalteromonas sp. 11-YPC25	1.33±0.36
Pseudoalteromonas sp. 09-YP001	3.17±0.0
Pseudoalteromonas sp. 11-YP016	2.1±0.15
Bacillus sp. 06-YP001	2.88±0.07
Loktanella maritima 06-YPC210	3.71±0.0
Loktanella maritima 06-YPC211	3.71±0.0
Cobetia sp. 10B-YPC21	3.49±0.13
Alteromonas sp. 03-YPC23	3.17±0.0
P. inhibens S4	3.89±0.10

[a] OD_{580} measurements are an average of three biological replicates tested in triplicate, S.D. = standard deviation.

V.b.4. Lobster shell and glass coverslip biofilm assay

To further characterize the biofilm formation potential of candidate probiotic isolates and the putative pathogens of ESD, modifications of the coverslip biofilm assay (22) were used to examine two additional substrates, sterile glass coverslips and sterilized lobster shell molts**.** Biofilm formation by *Thalassobius* sp. I31.1, *A. macrocephali* I32.4, and *P. inhibens* S4Sm on these two substrates were compared in order to determine whether there were differences in the amount of biofilm formed between the natural substrate (lobster shell) and glass coverslips**.** The differences between the CFU counts of the glass coverslip and lobster shells analyzed by ANOVA for *Thalassobius* sp. I31.1, *A. macrocephali* I32.4, and *P. inhibens* S4Sm were not significant [(p=0.99), $F(1,4)= 1.08\times10^{-7}$]. The difference between the cell densities of *Thalassobius sp. I31.1* on glass and on lobster shell was<12%; for *P. inhibens* S4Sm the cell density difference between glass and shell was <0.3%; and for *A. macrocephali* 132.4 the difference was <7%. Based on these results it was determined that the glass coverslip biofilm formation assay was an accurate, easy, and effective way to measure biofilm formation, and that biofilm formation by candidate probiotic isolates would be tested using this assay.

Biofilm cell densities (CFU/glass coverslip) of the selected candidate probiotic isolates were determined and compared to the biofilm cell density of *P. inhibens* S4Sm; a probiont known for strong biofilm formation (Table 4).

The ANOVA analysis showed significant differences between probiotics on biofilm formation on these surfaces [$p>0.0001$, $F(5,12)= 156.54$] (Table 4), confirming the results of the crystal violet biofilm assay (Table 3). The Tuckey Honest Significant Difference Test (Appendix 8) showed that *P. inhibens* S4Sm biofilms contain more cells than the biofilms of *Loktanella maritima* 06-YPC210 ($q=29.77$), *Loktanella maritima* 06-YPC211 ($q=12.18$), *Pseudoalteromonas* sp. 03-YP014 ($q=30.68$), *Pseudoalteromonas* sp. 08- YPC21 ($q=30.35$) and *Bacillus* sp. 06-YP001($q=23.46$). For example, P. inhibens S4Sm had ~23-fold more cells in a biofilm then L. maritima 06-YPC210. It is interesting to note that *L. maritima* strain 06-YPC211 produced a 14-fold more robust biofilm than strain 06-YPC210, and are statistically different from each other ($q=17.58$). The biofilm formed by isolate *L. maritima* 06- YPC211 was ~61% of the *P. inhibens* S4Sm biofilm. *Bacillus sp.* 06-YP001 produced biofilms that were ~25% of *P. inhibens* S4Sm biofilm. Further, *Pseudoalteromonas* sp. 03-YP014 and 08-YPC21 produced biofilms that were ~1.5% and 2.5%, respectively, of *P. inhibens* S4Sm biofilm. Overall, the tested potential probiotics showed a range of ability in forming biofilms on glass cover slips.

Table 5. Biofilm measurements of CFU/glass cover slip and lobster shell of isolates, putative pathogens and control.

Isolate	Average CFU/Glass Cover Slip (± S.D.) [a]	Average CFU/Lobster Shell[a] (± S.D.)	ANOVA p-values Comparing Glass Cover Slip and Lobster Shell
Thalassobius sp. I31.1	$6.00\times10^5 \pm 3.33\times10^4$	$5.33\times10^5 \pm 6.6\times10^4$	0.99
Aquimarina macrocephali I32.4	$1.53\times10^4 \pm 2.40\times10^3$	$1.63\times10^4 \pm 1.35\times10^3$	0.99
Phaeobacter inhibens S4Sm	$8.36\times10^6 \pm 1.1\times10^6$	$8.34\times10^6 \pm 5.68\times10^5$	0.99
Loktanella maritima 06-YPC210	$3.61\times10^5 \pm 3.50\times10^4$	-	-
Loktanella maritima 06-YPC211	$5.02\times10^6 \pm 1.92\times10^4$	-	-
Pseudoalteromonas sp. 03-YP014	$1.21\times10^5 \pm 2.83\times10^4$	-	-
Pseudoalteromonas sp. 08-YPC21	$2.07\times10^5 \pm 2.52\times10^4$	-	-
Bacillus sp. 06-YP001	$2.03\times10^6 \pm 1.76\times10^4$	-	-

[a]The data represent the average for three biological replicates, each tested in triplicate. S.D. = standard deviation. Biofilm determinations were made after incubation at 25˚C for 24 h in static and dark conditions as described in the Methods.

V.b.5. Determination of protease and chitinase activities.

Since ESD involves the degradation of protein in the lobster carapace (21) and proteases are frequently associated with virulence, it was important to identify the general proteolytic activities of the candidate probiotic isolates (6). Two different protease assays were used to measure proteolytic activity: one measured casein hydrolysis and the other measured gelatin hydrolysis. Additionally, chitinase activity, while not necessarily associated with ESD based on histological observations, is often associated with pathogenic potential in other lobster diseases (5). These tests were done by zone of proteolysis or zone of chitin degradation.

Twenty candidate probiotic isolates had protease activity against casein. Nineteen isolates had protease activity against gelatin, and only three isolates exhibited chitinolytic activity. Only one isolate exhibited hydrolytic activity against all 3 substrates. *P. inhibens* S4Sm, a known probiotic of potential interest (24), had protease activity against casein, but no protease activity against gelatin and no chitinolytic activity (Table 6).

The two putative pathogens were also tested for their ability to hydrolyze casein, gelatin, and chitin. *Thalassobius sp. I31.1* had protease activity against casein and gelatin, but no chitinolytic activity was detected. *A. macrocephali I32.4* exhibited protease activity against both casein and gelatin and also had chitinolytic activity (Table 7). *P. inhibens* S4Sm, a known probiotic of potential interest (24), was used as a control and had protease activity against casein, but no protease activity against gelatin and no chitinolytic activity (Table 6).

Table 6. Determination of protease and chitinase activities.

Isolate	Activity against substrate[a]		
	Casein	**Gelatin**	**Chitin**
Pseudoalteromonas sp. 08-SWC22	+	+	-
Pseudoalteromonas sp. 08-YPC21	+	-	-
Pseudoalteromonas sp. 08-SWC21	-	-	-
Pseudoalteromonas sp. 03-YP014	+	-	-
Pseudoalteromonas sp. 02-YP012	+	-	+
Pseudoalteromonas sp. 06-YPC22	+	+	-
Pseudoalteromonas sp. 06-YPC21	+	+	-
Pseudoalteromonas sp. 09-YP018	+	+	-
Pseudoalteromonas sp.09-YPC25	+	+	+
Pseudoalteromonas sp. 09-YPC23	+	+	-
Pseudoalteromonas sp. 09-YPO19	+	+	+
Pseudoalteromonas sp. 10B-YPO11	-	+	-
Pseudoalteromonas sp. 09-YPC29	+	+	-
Pseudoalteromonas sp. 06-SWC23	+	+	-
Pseudoalteromonas sp. 02-YPC22	+	+	-
Pseudoalteromonas sp.11-YP013	-	+	-
Pseudoalteromonas sp.11-YPC25	+	+	-
Pseudoalteromonas sp.09-YP001	+	-	-
Pseudoalteromonas sp. 11-YP016	+	+	-
Bacillus sp.06-YP001	+	+	-
Loktanella maritima 06-YPC210	+	+	-
Loktanella maritima 06-YPC211	+	+	-
Cobetia sp. 10B-YPC21	+	+	-
Alteromonas sp.03-YPC23	-	+	-

[a]A plus sign (+) denotes protease or chitinase activity detected; a minus sign (-) denotes no protease activity or no chitinase activity detected.

Table 7. Hydrolytic activity of putative lobster pathogens and *P. inhibens* S4Sm against casein, gelatin and chitin.

Organism	**Hydrolase activity against**[a]		
	Casein	**Gelatin**	**Chitin**
Thalassobius sp. I31.1	+	+	-
Aquimarina macrocephali I32.4	+	+	+
Phaeobacter inhibens S4Sm	+	-	-

[a]A plus sign (+) denotes activity detected; a minus sign (-) denotes no activity detected.

V.c. Inhibition of *Thalassobius sp. I31.1* growth and biofilm formation:

In order to test the ability of the various candidate probionts (four isolates and *P. inhibens* S4Sm) to reduce or prevent the growth of the ESD pathogen, *Thalassobius* sp. I31.1, a modification of the biofilm competition assay was used (23). Five candidates were selected based on larger zones of inhibition, higher crystal violet measurements, and were genetically diverse.

ANOVA was conducted to compare the effects of the selected probiotic isolates on *Thalassobius* sp. I31.1 CFU counts. The ANOVA analysis indicates that co-incubation with probiotic isolates has a significant effect on *Thalassobius* sp. I31.1 CFU [$p<0.0001$, $F(5,12)= 961.7$]. The Tuckey Honest Significant Difference Test shows that the differences between *Thalassobius* sp. I31.1 CFU counts challenged by the potential probiotic isolate and unchallenged were significantly different for *Loktanella maritima* 06-YPC210 (q=76.07), *Pseudoalteromonas* sp. 03-YP014 (q=75.95), *Pseudoalteromonas* sp. 08-YPC21 (q=75.98) and *Bacillus* sp. 06-YP001(q=75.8), and *P. inhibens* S4Sm (q=76.02). All tested probiotics had a similar impact on *Thalassobius* sp. I31.1 counts, which declined in ~2.5 orders of magnitude when incubated with *L. maritima* 06-YPC210, by ~2.18 orders of magnitude when incubated with *Bacillus* sp. 06-YP001, and by ~2.3 – 2.4 orders of magnitude when incubated with *Pseudoalteromonas* sp. 03-YP014, *Pseudoalteromonas* sp. 08-YPC21 or *P. inhibens* S4Sm.

Kruskal-Wallis Test was conducted to compare the effects of *Thalassobius* sp. I31.1 on cell counts of the selected probiotic isolates when in co-culture, showing that *Thalassobius* sp. I31.1 also had a significant effect on probiotic cell counts [p=0.009, K= 6.82, and the critical value = 3.84]. *L. maritima* 06-YPC210, when incubated with *Thalassobius* sp. I31.1 showed a decline in cell density by ~2.2 orders of magnitude when compared to the unchallenged *L. maritima* 06-YPC210 CFU counts. *Bacillus sp.* 06-YP001 when incubated with *Thalassobius* sp. I31.1, exhibits a decline in cell density by ~2.8 orders of magnitude when compared to the unchallenged control.

Pseudoalteromonas sp. 03-YP014 when incubated with *Thalassobius* sp. I31.1, showed a decline in cell density by ~2.94 orders of magnitude when compared to the unchallenged control. *Pseudoalteromonas sp*. 08-YPC21 when incubated with *Thalassobius* sp. I31.1 exhibits a decline in cell density by ~3.1 orders of magnitude when compared to the unchallenged control. The data shows that *P. inhibens* S4Sm, when incubated with *Thalassobius* sp. I31.1, exhibits a decline in cell density by ~4.6 orders of magnitude compared to the control *P. inhibens* S4Sm cell density.

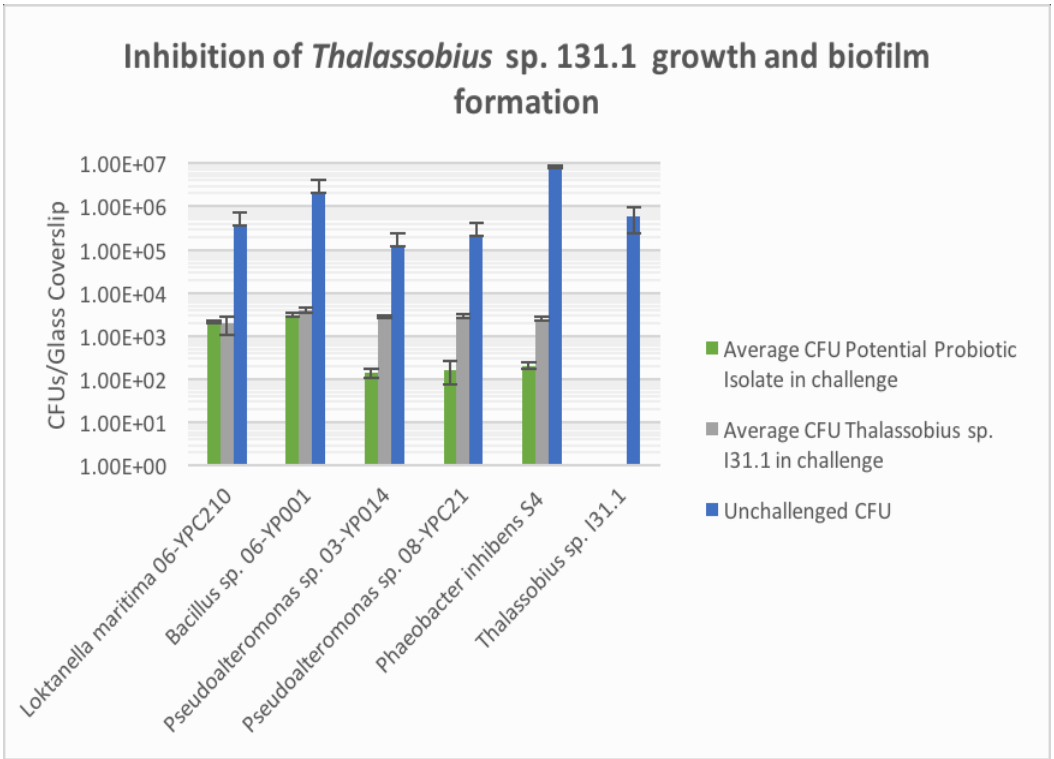

Figure 1. The effects on *Thalassobius* sp. I31.1 growth and biofilm formation when challenged by five selected probiotic candidate isolates and *P. inhibens* S4Sm. The data show the average of three biological replicates tested in triplicate. The error bars represent standard deviation.

V.d. Lobster shell assay

Epizootic shell disease visually affects the lobster carapace, causing lesions and melanization of the carapace (6). To test if the effect of the putative ESD pathogens can be visualized on the lobster carapaces, sterilized fragments of lobster shell molts were inoculated with *Thalassobius* sp. I31.1 or *A. macrocephali* I32.4 and were photographed over the course of six weeks. Images were taken pre-and post-sterilization and every two weeks for six weeks. *Thalassobius* sp. I31.1 and *A. macrocephali* I32.4 appear to have an effect on the shell color over time, as compared to non-treated shells. Shells treated with *Thalassobius* sp. I31.1 showed slight reddening of shells over time (Figure 2). Shell images show a slight change from weeks 0-2. From weeks 2-4 one can see the biggest change in shell color, and from weeks 4-6 a small change in shell color is observed. Shells treated with *A. macrocephali* I32.4 also showed reddening of each shell over the course of six weeks (Figure 3), with the largest color change being observed in weeks 4-6 one can. *Thalassobius* sp. I31.1 and *A. macrocephali* I32.4 appear to have an effect on the shell color over time.

Thalassobius sp. I31.1

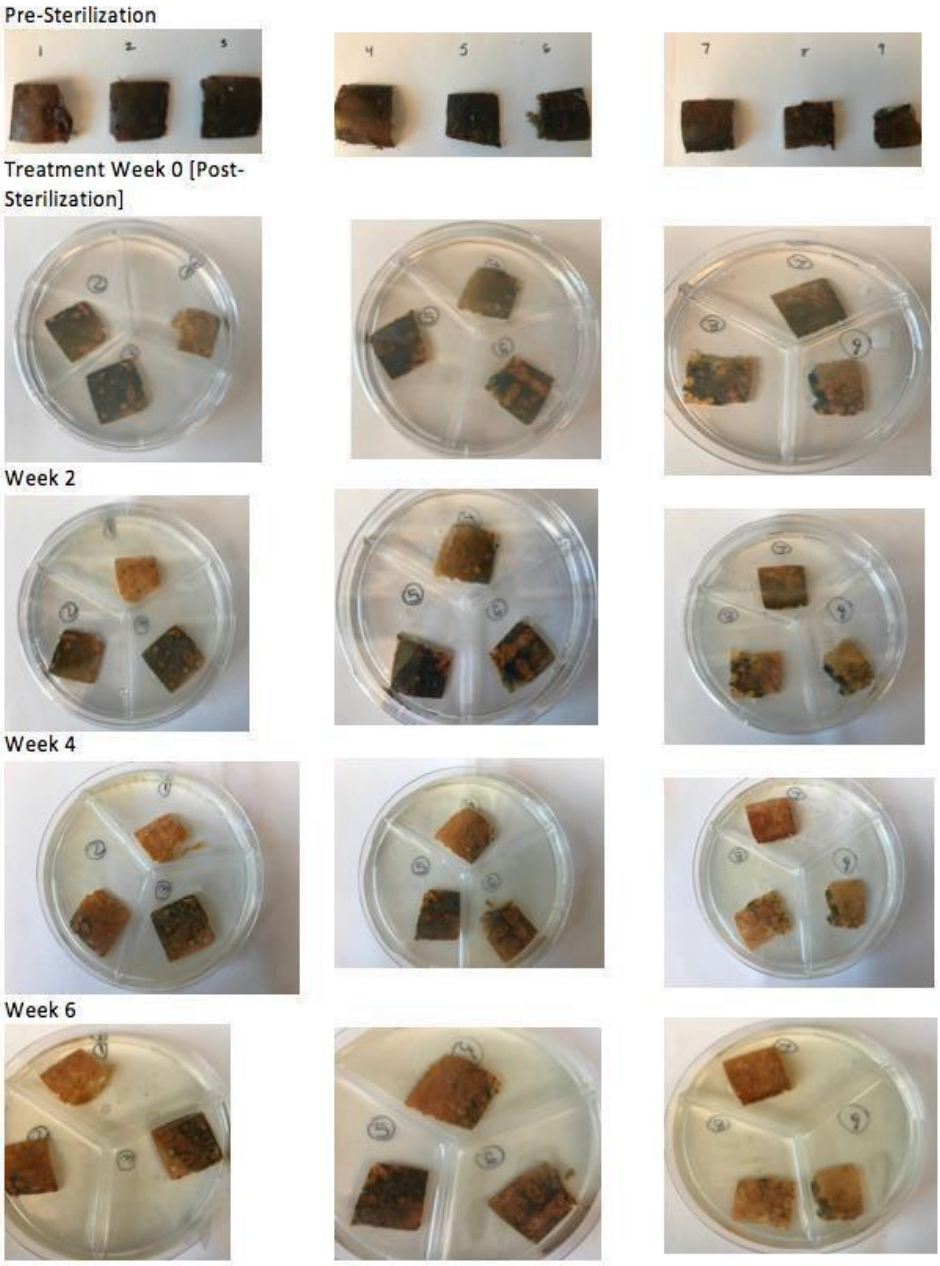

Figure 2. *Thalassobius* sp. I31.1 treated lobster shells**.** Images taken pre-and post-sterilization and at the end of every two weeks for six weeks. The images show three biological replicates tested in triplicate.

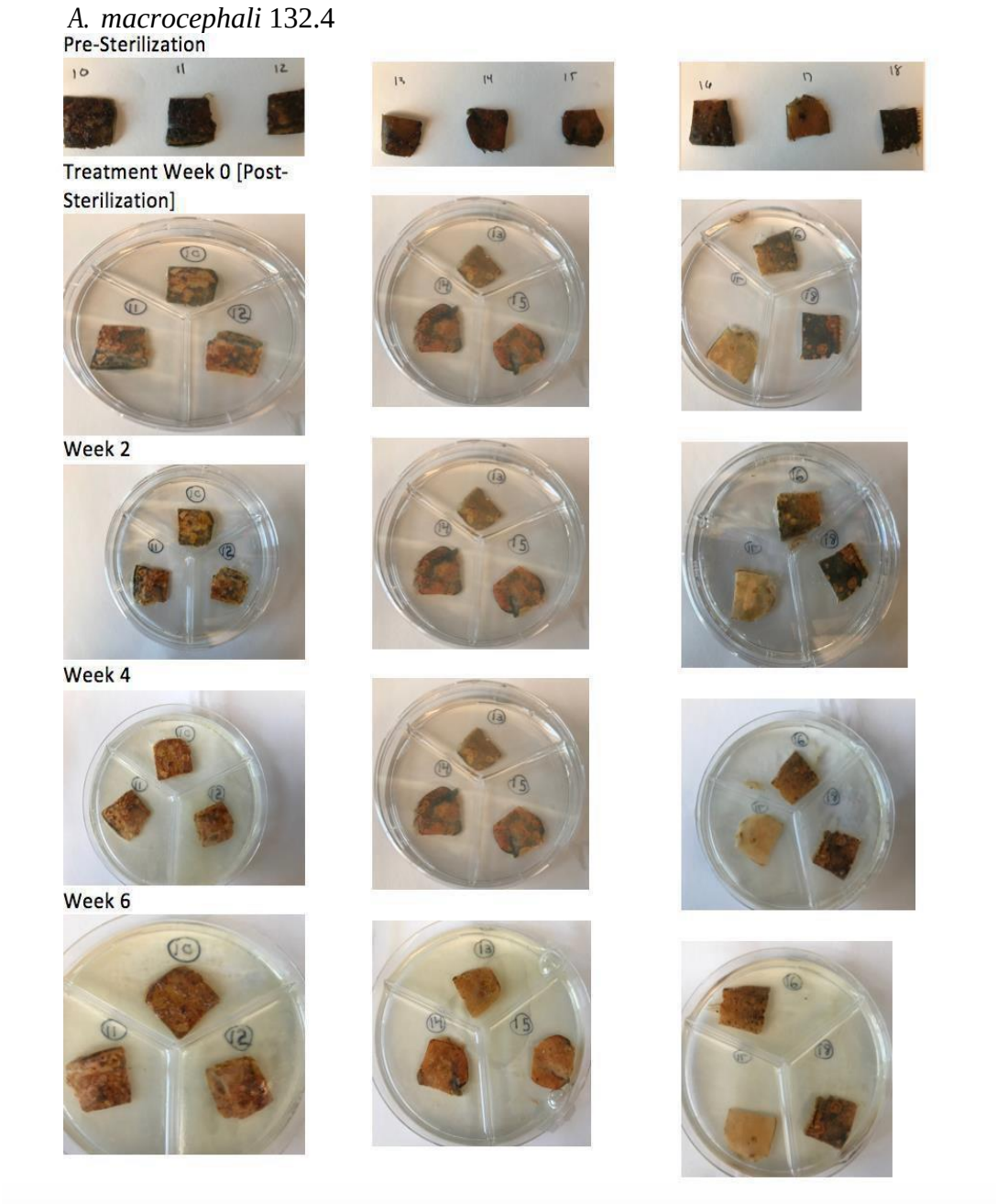

Figure 3. *A. macrocephali* I32.4 treated lobster shells. Images taken pre-and post-sterilization and every two weeks for six weeks. The images show three biological replicates tested in triplicate.

VI. Discussion

This study investigated the hypothesis whether bacteria isolated from lobster shells may serve as probiotic organisms that could be used to manage ESD. In this investigation, potential probiotic bacteria active against ESD were isolated from swabs of lobster carapaces.

In this study, lobsters were the source of 217 bacterial isolates that were screened for their ability to act as probiotic organisms to treat ESD. Initial screening for inhibition of growth of two lobster pathogens and for biofilm formation reduced the number of isolates to twenty-four, a ~90% reduction. Five out of 24 isolates showed strong inhibitory activity against either or both putative agents of ESD, *A. macrocephali* I32.4 (formerly *A. homaria* 132.4) and *Thalassobius* sp. I31.1, and produced strong biofilms; two characteristics that aid in probiotic function by colonizing the host and inhibiting the growth of potential pathogens (23). Two of the isolates, *Bacillus* sp. 06-YP001 and *Pseudoalteromonas* sp. 10B-YPO11, have inhibitory activity against both *A. macrocephali* I32.4, and *Thalassobius* sp. I31.1. The zone of inhibition measurements was different for these isolates suggesting multiple inhibitory activities may be going on, or that *Thalassobius* sp. I31.1 and *A. macrocephali* I32.4 have different susceptibilities to the same antibiotics. While itwas demonstrated *in vitro* that some isolated probiotic candidates were able to reduce the growth and biofilm formation of *Thalassobius* sp. I31.1 live lobster trials will be necessary to determine the effects of these probiotic candidates on the complex microbial communities on the shell.

As noted above, the ability to form a biofilm is an important characteristic for candidate probiotic bacteria. If a candidate probiont can colonize and form a biofilm on the lobster shell, it could prevent the progression of pathogen growth on the lobster shell by producing inhibitory compounds and by physically occupying the lobster shell (1). Two characteristics looked for in a probiotic, production of an inhibitory compound and biofilm formation, both promote probiotic activity. Biomatrix formation results in continuous administration of the inhibitory compound(s) and promotes probiotic activity (23). Additionally, isolation of potential probionts from swabs of lobster carapaces implies that the isolates are adapted to the lobster carapace (1). Previous research in oysters shows that the known probiotic organism, *P. inhibens* S4Sm, able to protect oysters against challenge with the bacterial pathogen *V. coralliilyticus*, is a prolific biofilm former (21), in contrast to the bacterial pathogens *V. coralliilyticus* and *V. anguillarum* (OD_{580} <1) (23). Of the characterized isolates with an OD_{580} >3, 8 of 11 were *Pseudoalteromonas*, 2 of 11 were *Loktanella* and 1 of 11 was *Cobetia*. The data demonstrate that the lobster isolates are all capable of forming biofilms and some of these isolates form robust biofilms, which suggest that these isolates could be better candidates for use as probionts.

Interestingly, most of the candidate 24 isolates (79%) were members of the genus *Pseudoaltermonas*. *Pseudoaltermonas* is found predominantly in the microbiota of a variety of marine fish (26) and has been used as a biocontrol agent in aquaculture (26). *Pseudoaltermonas fluorescens* has been shown to have inhibitory effect against *V. anguillarum* when applied to a larval culture of bay scallops (26).

Pseudoaltermonas spp. have been shown to be probiotic organisms in previous studies using various aquaculture systems (26), suggesting that some members of this genus may serve as a probiotic for ESD. One isolate out of the 24 was identified as a member of the genus *Bacillus* (potentially *Bacillus pumilus*, had a 98% identity when run through BLASTn), which also has been seen as a successful biocontrol agent (1). Another example of a probiotic *Bacillus* is *B. pumilus* RI06-95, which has been shown to protect larval oysters from mortality after challenge with *V. coralliilyticus* RE22 (10). Two of the candidate probiotic isolates were identified as *Loktanella maritima*. *Loktanella* spp., however, have been associated with epizootic shell disease lesions in previous ESD studies (5, 7, 11), and may be considered as a putative pathogen. Chistoserdov et al. 2012 (5) identified *Loktanella* in lesions of lobsters with shell disease. Meres et al. 2012 (11) compared apparently healthy carapace to diseased lobsters to identify different taxa in the microbial community, finding that *Loktanella* was one of the most abundant genera found in the diseased carapace. Other *Loktanella* species have been associated with other marine organisms. *Loktanella marincola* was isolated from the surface biofilm on scleractinian coral and was shown to induce larvae adhesion and metamorphosis (22). Moreover, *Loktanella* spp. have been identified from tidal flats (17) and from deep floor settlement (14). With the information known about *Loktanella* spp. it should not be used as a potential probiotic treatment.

The twenty-four candidate probiont isolates were further characterized for their protease and chitinase activity. The *H. americanus* carapace provides structural and protective properties to the organism (18). The carapace is composed of a chitin

matrix with polymers surrounding the matrix (18). Since these candidate probiotic bacteria would be used to treat ESD the determination of the protease and chitinase activities of the isolates would be useful to help assess the potential of these isolates to damage the lobster carapace and should not be included in further testing as probiotic candidates (1). Our data shows many isolates had casein, and or gelatin protease activity (Table 6). Where only a few isolates had chitinase activity (Table 6), any isolate that has chitinase activity will not be used to treat the lobsters since it could harm the carapace of the lobster. One isolate *Pseudoalteromonas* sp. 09-YPC25, had activity against all three substrates, casein, gelatin and chitin, similarly to the putative pathogen *A. macrocephali* I32.4. The *Pseudoalteromonas* sp. 09-YPC25 isolate would not be used as a potential probiotic due to its chitinase activity. The variability in the profiles of protease and chitinase activities between *Pseudoalteromonas* isolates indicates that these may belong to separate species. It is also consistent with the observation that *Pseudoalteromonas* spp. have a broad range of secreted extracellular compounds (26).

Biofilm formation is an important contributor to probiotic activity because it provides mechanisms for probiotic activity, such as, competition for adherence to the surface of the host and preventing contact between the pathogen and the host (23). Additionally, biofilms of bacteria that secrete antimicrobial compounds (i.e. TDA secreted by *P. inhibens* S4Sm) contribute to probiotic activity by inhibiting or killing pathogens (23). To determine which substrate would be best to characterize biofilm formation, glass coverslips and lobster shells were used in this assay. Lobster shells were used as another test substrate since the isolates were originally isolated from

swabs of lobster carapaces, it was hypothesized that the isolates may form a stronger biofilm on a substrate that it is already known to adhere to (12). Examination of the data comparing biofilm formation on glass coverslips and on lobster shell squares show that two lobster pathogens and the probiont, *A. macrocephali* I32.4, *Thalassobius* sp. I31.1, and *P. inhibens* S4Sm, respectively, each exhibit similar amounts of biofilm formation on glass coverslips and lobster shell (Table 5). These observations indicate that these bacteria do not discriminate between surfaces when forming biofilms. Additionally, these data suggest that glass coverslips are ineffective substrate to determine biofilm formation and their uniformity provides a highly reproducible platform. An illustration of this is the observation of nearly identical biofilm formation by *P. inhibens* S4Sm in this study compared to that reported by Zhao et al (26).

Based on the results from the assays, several isolates were selected for this biofilm assay because they exhibited: 1) larger zones of inhibition (2-4.3 mm),2) higher crystal violet biofilm (on polystyrene) OD_{580} measurements (2.88-3.71), 3) from a diversity of genera (*Bacillus*, *Loktanella*, and *Pseudoalteromonas*) and 4) had no chitinolytic activity detected. Further testing determined that the selected isolates do not form as strong as a biofilm on glass coverslips as *P. inhibens* S4Sm. This could be because the glass coverslip is different from the surface they were isolated from (lobster carapace) and the bacteria could have a harder time colonizing and adhering to the glass coverslip, though it was shown previously that three isolates selected had comparable biofilm formations on lobster shell and glass coverslips.

As hypothesized above, the ability to form a robust and durable biofilm with anti-pathogen properties would enable a putative probiotic organism to reduce or even prevent colonization of a host surface by pathogens such as those that contribute to ESD. Previously, Zhao et al. (26) demonstrated the importance of pre-colonization for probiotic success and also showed that both biofilm formation and antibiotic production by *P. inhibens* S4Sm contribute to probiotic activity. This study demonstrated the importance of both biofilm formation and antibiotic production to promote probiotic activity. The glass coverslip biofilm competition assay (26) was used in this study to determine the ability of the four-candidate probiotic bacterial isolates and *P. inhibens* S4Sm to inhibit biofilm formation of *Thalassobius* sp. I31.1. Data presented here show that when the various candidate probiont isolates were allowed to pre-colonize a glass surface, *Loktanella maritima* YPC210, *Bacillus* sp., two *Pseudoalteromonas* sp., and *P. inhibens* S4Sm were all effective at reducing the amount of *Thalassobius* sp. I31.1 by <3.0 orders of magnitude when compared to the control. However, these assays also showed that *Thalassobius sp. I31.1* was able to inhibit the growth of the 5 candidate probiotics tested by <4.0 orders of magnitude. This result is unlike the findings in Zhao et al. (26), where pre-colonized *P. inhibens* S4Sm dominated the competition with *V. coralliilyticus* RE22. However, *V. coralliilyticus* RE22 cells were not completely eliminated, which is similar to the observations of *Thalassobius* sp. I31.1 in this study. This suggests that multiple treatments may be necessary to keep probiotic organism established, and that

Thalassobius sp. I31.1 may be effective at counteracting the competition by the probiotics. More research needs to be done to determine the conditions that maximize the inhibitory effect of the probiotics on the pathogen *in vivo.* For example, we could test adding the probiotic to the pathogen pre-colonized glass coverslip to test a system more relevant to ESD.

ESD characteristically shows a change in the appearance of the carapace of lobsters (20, 23). Whitten et al. (23) performed a study that examined the development of lesions from abrasions and puncture wounds. They observed two kinds of morphologies; 1) lesions that expanded uniformly and displayed uniform edges; and 2) lesions that expanded irregularly with rough edges and melanization throughout the lesion. They also found that *A. macrocephali* I32.4 was present on 78% of the lesions. In this study, we tested the effects of *A. macrocephali* I32.4 and *Thalassobius* sp. 131.1 on the color of sterilized pieces of shell. The data show that shells inoculated with *Thalassobius* sp. I31.1 exhibit color change from grey/black to red during the first four weeks after inoculation. Shells inoculated with *A. macrocephali* I32.4 show color change from grey/black to red progressing over the six-week trial. There is a clear reddening effect, becoming more severe over time, when shells are inoculated with *A. macrocephali* I32.4. The reddening is more pronounced in shells treated with *A. macrocephali* I32.4. The change in shell color could indicate that our putative pathogens are having and effect on sterilized lobster shell pieces, potentially degrading them with their previously documented hydrolytic activity, suggesting that these assays may be useful models in the exploration of probiotic-pathogen dynamics.

Further studies using microscopic imaging should be done to evaluate the mechanisms behind the change in shell color, as well as characterize if these bacterial isolates are degrading shell material. These results, however, differ from those from Whitten et al. (23) in live lobsters, which describe a melanization of the cuticle over time after shell damage. The use of live lobsters, in addition to allowing to determine the depth of the lesions as well as how the lesions develop with smooth edges or rough edges, allows to determine the impact of bacteria on the melanization response, which would not occur on out shell fragments due to the effect of the sterilization. Further studies that used microscopic imaging to better evaluate the change in appearance as well as evaluate the depth of the lesions formed would need to be done to understand what causes the color change with the colonization of ESD pathogens.

In conclusion, 24 out of over 200 isolates were tested and characterized as potential probiotic organisms. Isolates that had inhibitory activity against one or both pathogens and strong biofilm formation were tested to determine their effects on *Thalassobius* sp. I31.1 growth and biofilm formation. Colonization competition assays demonstrated that some isolates were able to reduce the growth of *Thalassobius sp.* I31.1. Further studies looking at the interactions of the putative pathogens and potential probiotics, *Bacillus* sp. 06-YP001 and *Pseudoalteromonas sp*. 03-YP014, would help determine the cause and process of developing epizootic shell disease.

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APPENDICES

Appendix 1. 16S rRNA Gene Sequence of Lobster Isolates

>Sequence_Pseudoalteromonas sp. 08-YPC21

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>Sequence_Pseudoalteromonas sp. 08-SWC21

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>Sequence_ Pseudoalteromonas sp. 03-YP014

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>Sequence_ Pseudoalteromonas sp. 02-YP012

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>Sequence_Pseudoalteromonas sp. 06-YPC22

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>Sequence_ Pseudoalteromonas sp. 06-YPC21

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>Sequence_ Pseudoalteromonas sp. 09-YP018

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>Sequence_Pseudoalteromonas sp. 09-YPC23

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>Sequence_ Pseudoalteromonas sp. 09-YPO19

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>Sequence_Pseudoalteromonas sp. 10B-YPO11

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>Sequence_Pseudoalteromonas sp. 09-YPC29

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>Sequence_Pseudoalteromonas sp. 06-SWC23

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>Sequence_Pseudoalteromonas sp. 02-YPC22

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CGTGGGGAGCAAACAGGATTAGATACCCTGGTAGTCCACGCCGTAAACGATGTCTACTAGAAGCTCGGANCCTCGGCTCTG
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>Sequence_Pseudoalteromonas sp. 11-YP013

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GCGGTGAAATGCGTAGAGATCTGAAGGAATACCGATGGCGAANGCAGCCACCTGGGTCAACACTGACGCTCATGTACNAN
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>Sequence_Pseudoalteromonas sp. 11-YPC25

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>Sequence_Pseudoalteromonas sp. 09-YP001

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>Sequence_Pseudoalteromonas sp. 11-YP016

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>Sequence_Bacillus sp. 06-YP001

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>Sequence_ Loktanella maritima 06-YPC210

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TAGATAGTTGGTGGGGTAATGGCCTACCAAGTCTACGATCTTTAGCTGGTTTGAGAGGATGATCACCAACACTGGG
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>Sequence_Loktanella maritima 06-YPC211

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>Sequence_Cobetia sp. 10B-YPC21

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>Sequence_ Altermonas sp. 03-YPC23

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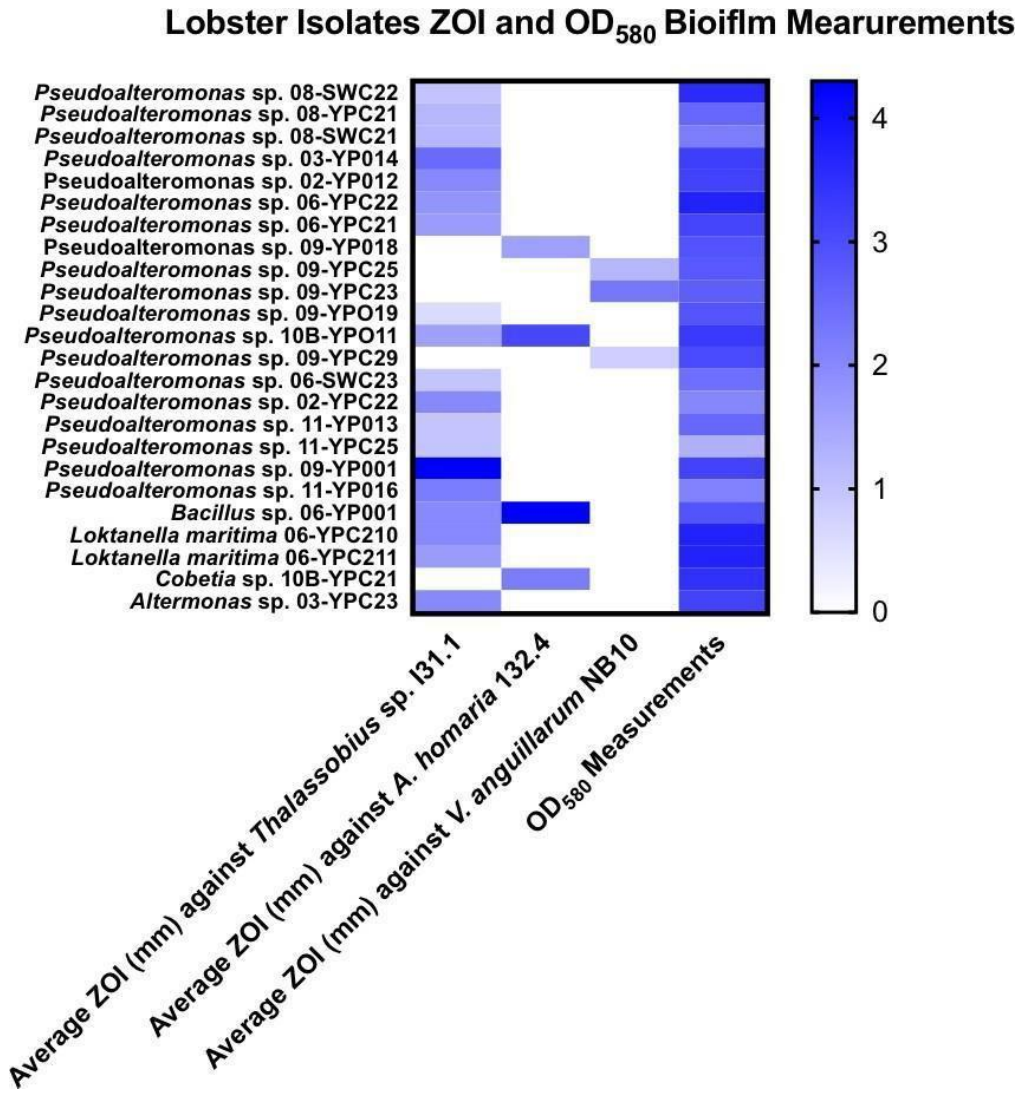
Appendix 2. Heat map of lobster isolate data



Appendix 3. Lobster isolate characterization table

Isolate Id	Average ZOI (mm) Against *Thalassobius sp. I31.1*	Average ZOI (mm) Against *Aquimarina homaria* 132.4	Average ZOI (mm) Against *Vibrio anguillarum NB10*	Biofilm Measurement	Hydrolysis Activity			Average CFU/Glass Cover Slip (± S.D.) [b]
				(OD_{580} ±S.D.) [a]	Casein	Gelatin	Chitin	
Pseudoalteromonas sp. 08-SWC22	1±0	0±0	0±0	3.57±0.02	+	+	-	n/d[c]
Pseudoalteromonas sp. 08-YPC21	1.2±0.3	0±0	0±0	2.55±0.10	+	-	-	$2.07\times10^5\pm2.52\times10^4$
Pseudoalteromonas sp. 08-SWC21	1.2±0.3	0±0	0±0	2.18±0.40	-	-	-	n/d
Pseudoalteromonas sp. 03-YP014	2.5±0.5	0±0	0±0	3.24±0.23	+	-	-	$1.21\times10^5\pm2.83\times10^4$
Pseudoalteromonas sp. 02-YP012	2±0	0±0	0±0	3.17±0.27	+	-	+	n/d
Pseudoalteromonas sp. 06-YPC22	1.8±0.3	0±0	0±0	3.71±0.0	+	+	-	n/d
Pseudoalteromonas sp. 06-YPC21	1.7±0.3	0±0	0±0	3.12±0.0	+	+	-	n/d
Pseudoalteromonas sp. 09-YP018	0±0	1.6±0.3	0±0	2.89±0.03	+	+	-	n/d
Pseudoalteromonas sp. 09-YPC25	0±0	0±0	1.2±0.4	2.79±0.03	+	+	+	n/d
Pseudoalteromonas sp. 09-YPC23	0±0	0±0	2.3±0.25	2.71±0.12	+	+	-	n/d
Pseudoalteromonas sp. 09-YPO19	0.6±0.16	0±0	0±0	2.86±0.04	+	+	+	n/d
Pseudoalteromonas sp. 10B-YPO11	1.6±0.3	3.1±0.3	0±0	3.32±0.18	-	+	-	n/d
Pseudoalteromonas sp. 09-YPC29	0±0	0±0	0.8±0.06	3.05±0.03	+	+	-	n/d
Pseudoalteromonas sp. 06-SWC23	<1±0	0±0	0±0	2.43±0.25	+	+	-	n/d
Pseudoalteromonas sp. 02-YPC22	2±0.06	0±0	0±0	2.04±0.06	+	+	-	n/d

Pseudoalteromonas sp. 11-YP013	<1±0	0±0	0±0	2.53±0.01	-	+	-	n/d
Pseudoalteromonas sp. 11-YPC25	<1±0.23	0±0	0±0	1.33±0.36	+	+	-	n/d
Pseudoalteromonas sp. 09-YP001	4.3±0.6	0±0	0±0	3.17±0.0	+	-	-	n/d
Pseudoalteromonas sp. 11-YP016	2.2±0.3	0±0	0±0	2.1±0.15	+	+	-	n/d
Bacillus sp. 06-YP001	2±0	4.3±0.6	0±0	2.88±0.07	+	+	-	$2.03\times10^{6}\pm1.76\times10^{4}$
Loktanella maritima 06-YPC210	2±0	0±0	0±0	3.71±0.0	+	+	-	$3.61\times10^{5}\pm3.50\times10^{4}$
Loktanella maritima 06-YPC211	1.7±0.6	0±0	0±0	3.71±0.0	+	+	-	$5.02\times10^{6}\pm1.92\times10^{4}$
Cobetia sp. 10B-YPC21	0±0	2.2±0.3	0±0	3.49±0.13	+	+	-	n/d
Altermonas sp. 03-YPC23	2±0.3	0±0	0±0	3.17±0.0	-	+	-	n/d

[a] OD_{580} measurements are an average of three biological replicates tested in triplicate. S.D. = standard deviation.
[b] S.D.= standard deviation
[c] (n/d) not determined

Appendix 4. Tuckey Honest Significant Difference Test between ZOI (mm) against *V. anguillarum* NB10

Group 1 (M1)	Group 2 (M2)	M1	M2	MSw	N	Tukey's HSD q[a]	Signifcance[b]
Pseudoalteromonas sp. 08-SWC22	*Pseudoalteromonas* sp. 08-SWC22[c]	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-SWC22	*Pseudoalteromonas* sp. 08-YPC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-SWC22	*Pseudoalteromonas* sp. 08-SWC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-SWC22	*Pseudoalteromonas* sp. 03-YP014	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-SWC22	*Pseudoalteromonas* sp. 02-YP012	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-SWC22	*Pseudoalteromonas* sp. 06-YPC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-SWC22	*Pseudoalteromonas* sp. 06-YPC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-SWC22	*Pseudoalteromonas* sp. 09-YP018	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-SWC22	*Pseudoalteromonas* sp. 09-YPC25	0	1.17	0.00625	3	25.56	TRUE
Pseudoalteromonas sp. 08-SWC22	*Pseudoalteromonas* sp. 09-YPC23	0	2.27	0.00625	3	49.66	TRUE
Pseudoalteromonas sp. 08-SWC22	*Pseudoalteromonas* sp. 09-YPO19	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-SWC22	*Pseudoalteromonas* sp. 10B-YPO11	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-SWC22	*Pseudoalteromonas* sp. 09-YPC29	0	0.77	0.00625	3	16.80	TRUE
Pseudoalteromonas sp. 08-SWC22	*Pseudoalteromonas* sp. 06-SWC23	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-SWC22	*Pseudoalteromonas* sp. 02-YPC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-SWC22	*Pseudoalteromonas* sp. 11-YP013	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-SWC22	*Pseudoalteromonas* sp. 11-YPC25	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-SWC22	*Pseudoalteromonas* sp. 09-YP001	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-SWC22	*Pseudoalteromonas* sp. 11-YP016	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-SWC22	*Bacillus* sp. 06-YP001	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-SWC22	*Loktanella maritima* 06-YPC210	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-SWC22	*Loktanella maritima* 06-YPC211	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-SWC22	*Cobetia* sp. 10B-YPC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-SWC22	*Altermonas* sp. 03-YPC23	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-YPC21	*Pseudoalteromonas* sp. 08-SWC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-YPC21	*Pseudoalteromonas* sp. 08-YPC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-YPC21	*Pseudoalteromonas* sp. 08-SWC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-YPC21	*Pseudoalteromonas* sp. 03-YP014	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-YPC21	*Pseudoalteromonas* sp. 02-YP012	0	0	0.00625	3	0.00	FALSE

Group 1 (M1)	Group 2 (M2)	M1	M2	MSw	N	Tukey's HSD q[a]	Signifcance[b]
Pseudoalteromonas sp. 08-YPC21	*Pseudoalteromonas* sp. 06-YPC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-YPC21	*Pseudoalteromonas* sp. 06-YPC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-YPC21	*Pseudoalteromonas* sp. 09-YP018	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-YPC21	*Pseudoalteromonas* sp. 09-YPC25	0	1.17	0.00625	3	25.56	TRUE
Pseudoalteromonas sp. 08-YPC21	*Pseudoalteromonas* sp. 09-YPC23	0	2.27	0.00625	3	49.66	TRUE
Pseudoalteromonas sp. 08-YPC21	*Pseudoalteromonas* sp. 09-YPO19	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-YPC21	*Pseudoalteromonas* sp. 10B-YPO11	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-YPC21	*Pseudoalteromonas* sp. 09-YPC29	0	0.77	0.00625	3	16.80	TRUE
Pseudoalteromonas sp. 08-YPC21	*Pseudoalteromonas* sp. 06-SWC23	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-YPC21	*Pseudoalteromonas* sp. 02-YPC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-YPC21	*Pseudoalteromonas* sp. 11-YP013	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-YPC21	*Pseudoalteromonas* sp. 11-YPC25	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-YPC21	*Pseudoalteromonas* sp. 09-YP001	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-YPC21	*Pseudoalteromonas* sp. 11-YP016	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-YPC21	*Bacillus* sp. 06-YP001	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-YPC21	*Loktanella maritima* 06-YPC210	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-YPC21	*Loktanella maritima* 06-YPC211	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-YPC21	*Cobetia* sp. 10B-YPC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-YPC21	*Altermonas* sp. 03-YPC23	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-SWC21	*Pseudoalteromonas* sp. 08-SWC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-SWC21	*Pseudoalteromonas* sp. 08-YPC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-SWC21	*Pseudoalteromonas* sp. 08-SWC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-SWC21	*Pseudoalteromonas* sp. 03-YP014	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-SWC21	*Pseudoalteromonas* sp. 02-YP012	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-SWC21	*Pseudoalteromonas* sp. 06-YPC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-SWC21	*Pseudoalteromonas* sp. 06-YPC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-SWC21	*Pseudoalteromonas* sp. 09-YP018	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-SWC21	*Pseudoalteromonas* sp. 09-YPC25	0	1.17	0.00625	3	25.56	TRUE
Pseudoalteromonas sp. 08-SWC21	*Pseudoalteromonas* sp. 09-YPC23	0	2.27	0.00625	3	49.66	TRUE
Pseudoalteromonas sp. 08-SWC21	*Pseudoalteromonas* sp. 09-YPO19	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-SWC21	*Pseudoalteromonas* sp. 10B-YPO11	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-SWC21	*Pseudoalteromonas* sp. 09-YPC29	0	0.77	0.00625	3	16.80	TRUE

Group 1 (M1)	Group 2 (M2)	M1	M2	MSw	N	Tukey's HSD q[a]	Signifcance[b]
Pseudoalteromonas sp. 08-SWC21	*Pseudoalteromonas* sp. 06-SWC23	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-SWC21	*Pseudoalteromonas* sp. 02-YPC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-SWC21	*Pseudoalteromonas* sp. 11-YP013	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-SWC21	*Pseudoalteromonas* sp. 11-YPC25	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-SWC21	*Pseudoalteromonas* sp. 09-YP001	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-SWC21	*Pseudoalteromonas* sp. 11-YP016	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-SWC21	*Bacillus* sp. 06-YP001	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-SWC21	*Loktanella maritima* 06-YPC210	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-SWC21	*Loktanella maritima* 06-YPC211	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-SWC21	*Cobetia* sp. 10B-YPC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-SWC21	*Altermonas* sp. 03-YPC23	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 03-YP014	*Pseudoalteromonas* sp. 08-SWC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 03-YP014	*Pseudoalteromonas* sp. 08-YPC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 03-YP014	*Pseudoalteromonas* sp. 08-SWC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 03-YP014	*Pseudoalteromonas* sp. 03-YP014	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 03-YP014	*Pseudoalteromonas* sp. 02-YP012	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 03-YP014	*Pseudoalteromonas* sp. 06-YPC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 03-YP014	*Pseudoalteromonas* sp. 06-YPC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 03-YP014	*Pseudoalteromonas* sp. 09-YP018	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 03-YP014	*Pseudoalteromonas* sp. 09-YPC25	0	1.17	0.00625	3	25.56	TRUE
Pseudoalteromonas sp. 03-YP014	*Pseudoalteromonas* sp. 09-YPC23	0	2.27	0.00625	3	49.66	TRUE
Pseudoalteromonas sp. 03-YP014	*Pseudoalteromonas* sp. 09-YPO19	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 03-YP014	*Pseudoalteromonas* sp. 10B-YPO11	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 03-YP014	*Pseudoalteromonas* sp. 09-YPC29	0	0.77	0.00625	3	16.80	TRUE
Pseudoalteromonas sp. 03-YP014	*Pseudoalteromonas* sp. 06-SWC23	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 03-YP014	*Pseudoalteromonas* sp. 02-YPC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 03-YP014	*Pseudoalteromonas* sp. 11-YP013	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 03-YP014	*Pseudoalteromonas* sp. 11-YPC25	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 03-YP014	*Pseudoalteromonas* sp. 09-YP001	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 03-YP014	*Pseudoalteromonas* sp. 11-YP016	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 03-YP014	*Bacillus* sp. 06-YP001	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 03-YP014	*Loktanella maritima* 06-YPC210	0	0	0.00625	3	0.00	FALSE

Group 1 (M1)	Group 2 (M2)	M1	M2	MSw	N	Tukey's HSD q[a]	Signifcance[b]
Pseudoalteromonas sp. 03-YP014	*Loktanella maritima* 06-YPC211	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 03-YP014	*Cobetia* sp. 10B-YPC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 03-YP014	*Altermonas* sp. 03-YPC23	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 02-YP012	*Pseudoalteromonas* sp. 08-SWC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 02-YP012	*Pseudoalteromonas* sp. 08-YPC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 02-YP012	*Pseudoalteromonas* sp. 08-SWC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 02-YP012	*Pseudoalteromonas* sp. 03-YP014	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 02-YP012	*Pseudoalteromonas* sp. 02-YP012	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 02-YP012	*Pseudoalteromonas* sp. 06-YPC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 02-YP012	*Pseudoalteromonas* sp. 06-YPC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 02-YP012	*Pseudoalteromonas* sp. 09-YP018	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 02-YP012	*Pseudoalteromonas* sp. 09-YPC25	0	1.17	0.00625	3	25.56	TRUE
Pseudoalteromonas sp. 02-YP012	*Pseudoalteromonas* sp. 09-YPC23	0	2.27	0.00625	3	49.66	TRUE
Pseudoalteromonas sp. 02-YP012	*Pseudoalteromonas* sp. 09-YPO19	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 02-YP012	*Pseudoalteromonas* sp. 10B-YPO11	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 02-YP012	*Pseudoalteromonas* sp. 09-YPC29	0	0.77	0.00625	3	16.80	TRUE
Pseudoalteromonas sp. 02-YP012	*Pseudoalteromonas* sp. 06-SWC23	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 02-YP012	*Pseudoalteromonas* sp. 02-YPC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 02-YP012	*Pseudoalteromonas* sp. 11-YP013	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 02-YP012	*Pseudoalteromonas* sp. 11-YPC25	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 02-YP012	*Pseudoalteromonas* sp. 09-YP001	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 02-YP012	*Pseudoalteromonas* sp. 11-YP016	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 02-YP012	*Bacillus* sp. 06-YP001	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 02-YP012	*Loktanella maritima* 06-YPC210	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 02-YP012	*Loktanella maritima* 06-YPC211	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 02-YP012	*Cobetia* sp. 10B-YPC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 02-YP012	*Altermonas* sp. 03-YPC23	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-YPC22	*Pseudoalteromonas* sp. 08-SWC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-YPC22	*Pseudoalteromonas* sp. 08-YPC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-YPC22	*Pseudoalteromonas* sp. 08-SWC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-YPC22	*Pseudoalteromonas* sp. 03-YP014	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-YPC22	*Pseudoalteromonas* sp. 02-YP012	0	0	0.00625	3	0.00	FALSE

Group 1 (M1)	Group 2 (M2)	M1	M2	MSw	N	Tukey's HSD q[a]	Signifcance[b]
Pseudoalteromonas sp. 06-YPC22	*Pseudoalteromonas* sp. 06-YPC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-YPC22	*Pseudoalteromonas* sp. 06-YPC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-YPC22	*Pseudoalteromonas* sp. 09-YP018	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-YPC22	*Pseudoalteromonas* sp. 09-YPC25	0	1.17	0.00625	3	25.56	TRUE
Pseudoalteromonas sp. 06-YPC22	*Pseudoalteromonas* sp. 09-YPC23	0	2.27	0.00625	3	49.66	TRUE
Pseudoalteromonas sp. 06-YPC22	*Pseudoalteromonas* sp. 09-YPO19	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-YPC22	*Pseudoalteromonas* sp. 10B-YPO11	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-YPC22	*Pseudoalteromonas* sp. 09-YPC29	0	0.77	0.00625	3	16.80	TRUE
Pseudoalteromonas sp. 06-YPC22	*Pseudoalteromonas* sp. 06-SWC23	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-YPC22	*Pseudoalteromonas* sp. 02-YPC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-YPC22	*Pseudoalteromonas* sp. 11-YP013	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-YPC22	*Pseudoalteromonas* sp. 11-YPC25	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-YPC22	*Pseudoalteromonas* sp. 09-YP001	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-YPC22	*Pseudoalteromonas* sp. 11-YP016	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-YPC22	*Bacillus* sp. 06-YP001	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-YPC22	*Loktanella maritima* 06-YPC210	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-YPC22	*Loktanella maritima* 06-YPC211	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-YPC22	*Cobetia* sp. 10B-YPC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-YPC22	*Altermonas* sp. 03-YPC23	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-YPC21	*Pseudoalteromonas* sp. 08-SWC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-YPC21	*Pseudoalteromonas* sp. 08-YPC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-YPC21	*Pseudoalteromonas* sp. 08-SWC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-YPC21	*Pseudoalteromonas* sp. 03-YP014	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-YPC21	*Pseudoalteromonas* sp. 02-YP012	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-YPC21	*Pseudoalteromonas* sp. 06-YPC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-YPC21	*Pseudoalteromonas* sp. 06-YPC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-YPC21	*Pseudoalteromonas* sp. 09-YP018	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-YPC21	*Pseudoalteromonas* sp. 09-YPC25	0	1.17	0.00625	3	25.56	TRUE
Pseudoalteromonas sp. 06-YPC21	*Pseudoalteromonas* sp. 09-YPC23	0	2.27	0.00625	3	49.66	TRUE
Pseudoalteromonas sp. 06-YPC21	*Pseudoalteromonas* sp. 09-YPO19	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-YPC21	*Pseudoalteromonas* sp. 10B-YPO11	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-YPC21	*Pseudoalteromonas* sp. 09-YPC29	0	0.77	0.00625	3	16.80	TRUE

Group 1 (M1)	Group 2 (M2)	M1	M2	MSw	N	Tukey's HSD q[a]	Signifcance[b]
Pseudoalteromonas sp. 06-YPC21	*Pseudoalteromonas* sp. 06-SWC23	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-YPC21	*Pseudoalteromonas* sp. 02-YPC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-YPC21	*Pseudoalteromonas* sp. 11-YP013	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-YPC21	*Pseudoalteromonas* sp. 11-YPC25	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-YPC21	*Pseudoalteromonas* sp. 09-YP001	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-YPC21	*Pseudoalteromonas* sp. 11-YP016	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-YPC21	*Bacillus* sp. 06-YP001	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-YPC21	*Loktanella maritima* 06-YPC210	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-YPC21	*Loktanella maritima* 06-YPC211	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-YPC21	*Cobetia* sp. 10B-YPC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-YPC21	*Altermonas* sp. 03-YPC23	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YP018	*Pseudoalteromonas* sp. 08-SWC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YP018	*Pseudoalteromonas* sp. 08-YPC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YP018	*Pseudoalteromonas* sp. 08-SWC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YP018	*Pseudoalteromonas* sp. 03-YP014	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YP018	*Pseudoalteromonas* sp. 02-YP012	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YP018	*Pseudoalteromonas* sp. 06-YPC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YP018	*Pseudoalteromonas* sp. 06-YPC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YP018	*Pseudoalteromonas* sp. 09-YP018	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YP018	*Pseudoalteromonas* sp. 09-YPC25	0	1.17	0.00625	3	25.56	TRUE
Pseudoalteromonas sp. 09-YP018	*Pseudoalteromonas* sp. 09-YPC23	0	2.27	0.00625	3	49.66	TRUE
Pseudoalteromonas sp. 09-YP018	*Pseudoalteromonas* sp. 09-YPO19	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YP018	*Pseudoalteromonas* sp. 10B-YPO11	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YP018	*Pseudoalteromonas* sp. 09-YPC29	0	0.77	0.00625	3	16.80	TRUE
Pseudoalteromonas sp. 09-YP018	*Pseudoalteromonas* sp. 06-SWC23	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YP018	*Pseudoalteromonas* sp. 02-YPC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YP018	*Pseudoalteromonas* sp. 11-YP013	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YP018	*Pseudoalteromonas* sp. 11-YPC25	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YP018	*Pseudoalteromonas* sp. 09-YP001	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YP018	*Pseudoalteromonas* sp. 11-YP016	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YP018	*Bacillus* sp. 06-YP001	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YP018	*Loktanella maritima* 06-YPC210	0	0	0.00625	3	0.00	FALSE

Group 1 (M1)	Group 2 (M2)	M1	M2	MSw	N	Tukey's HSD q[a]	Signifcance[b]
Pseudoalteromonas sp. 09-YP018	*Loktanella maritima* 06-YPC211	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YP018	*Cobetia* sp. 10B-YPC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YP018	*Altermonas* sp. 03-YPC23	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPC25	*Pseudoalteromonas* sp. 08-SWC22	1.17	0	0.00625	3	25.56	TRUE
Pseudoalteromonas sp. 09-YPC25	*Pseudoalteromonas* sp. 08-YPC21	1.17	0	0.00625	3	25.56	TRUE
Pseudoalteromonas sp. 09-YPC25	*Pseudoalteromonas* sp. 08-SWC21	1.17	0	0.00625	3	25.56	TRUE
Pseudoalteromonas sp. 09-YPC25	*Pseudoalteromonas* sp. 03-YP014	1.17	0	0.00625	3	25.56	TRUE
Pseudoalteromonas sp. 09-YPC25	*Pseudoalteromonas* sp. 02-YP012	1.17	0	0.00625	3	25.56	TRUE
Pseudoalteromonas sp. 09-YPC25	*Pseudoalteromonas* sp. 06-YPC22	1.17	0	0.00625	3	25.56	TRUE
Pseudoalteromonas sp. 09-YPC25	*Pseudoalteromonas* sp. 06-YPC21	1.17	0	0.00625	3	25.56	TRUE
Pseudoalteromonas sp. 09-YPC25	*Pseudoalteromonas* sp. 09-YP018	1.17	0	0.00625	3	25.56	TRUE
Pseudoalteromonas sp. 09-YPC25	*Pseudoalteromonas* sp. 09-YPC25	1.17	1.17	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPC25	*Pseudoalteromonas* sp. 09-YPC23	1.17	2.27	0.00625	3	24.10	TRUE
Pseudoalteromonas sp. 09-YPC25	*Pseudoalteromonas* sp. 09-YPO19	1.17	0	0.00625	3	25.56	TRUE
Pseudoalteromonas sp. 09-YPC25	*Pseudoalteromonas* sp. 10B-YPO11	1.17	0	0.00625	3	25.56	TRUE
Pseudoalteromonas sp. 09-YPC25	*Pseudoalteromonas* sp. 09-YPC29	1.17	0.77	0.00625	3	8.76	TRUE
Pseudoalteromonas sp. 09-YPC25	*Pseudoalteromonas* sp. 06-SWC23	1.17	0	0.00625	3	25.56	TRUE
Pseudoalteromonas sp. 09-YPC25	*Pseudoalteromonas* sp. 02-YPC22	1.17	0	0.00625	3	25.56	TRUE
Pseudoalteromonas sp. 09-YPC25	*Pseudoalteromonas* sp. 11-YP013	1.17	0	0.00625	3	25.56	TRUE
Pseudoalteromonas sp. 09-YPC25	*Pseudoalteromonas* sp. 11-YPC25	1.17	0	0.00625	3	25.56	TRUE
Pseudoalteromonas sp. 09-YPC25	*Pseudoalteromonas* sp. 09-YP001	1.17	0	0.00625	3	25.56	TRUE
Pseudoalteromonas sp. 09-YPC25	*Pseudoalteromonas* sp. 11-YP016	1.17	0	0.00625	3	25.56	TRUE
Pseudoalteromonas sp. 09-YPC25	*Bacillus* sp. 06-YP001	1.17	0	0.00625	3	25.56	TRUE
Pseudoalteromonas sp. 09-YPC25	*Loktanella maritima* 06-YPC210	1.17	0	0.00625	3	25.56	TRUE
Pseudoalteromonas sp. 09-YPC25	*Loktanella maritima* 06-YPC211	1.17	0	0.00625	3	25.56	TRUE
Pseudoalteromonas sp. 09-YPC25	*Cobetia* sp. 10B-YPC21	1.17	0	0.00625	3	25.56	TRUE
Pseudoalteromonas sp. 09-YPC25	*Altermonas* sp. 03-YPC23	1.17	0	0.00625	3	25.56	TRUE
Pseudoalteromonas sp. 09-YPC23	*Pseudoalteromonas* sp. 08-SWC22	2.27	0	0.00625	3	49.66	TRUE
Pseudoalteromonas sp. 09-YPC23	*Pseudoalteromonas* sp. 08-YPC21	2.27	0	0.00625	3	49.66	TRUE
Pseudoalteromonas sp. 09-YPC23	*Pseudoalteromonas* sp. 08-SWC21	2.27	0	0.00625	3	49.66	TRUE
Pseudoalteromonas sp. 09-YPC23	*Pseudoalteromonas* sp. 03-YP014	2.27	0	0.00625	3	49.66	TRUE
Pseudoalteromonas sp. 09-YPC23	*Pseudoalteromonas* sp. 02-YP012	2.27	0	0.00625	3	49.66	TRUE

Group 1 (M1)	Group 2 (M2)	M1	M2	MSw	N	Tukey's HSD q[a]	Signifcance[b]
Pseudoalteromonas sp. 09-YPC23	*Pseudoalteromonas* sp. 06-YPC22	2.27	0	0.00625	3	49.66	TRUE
Pseudoalteromonas sp. 09-YPC23	*Pseudoalteromonas* sp. 06-YPC21	2.27	0	0.00625	3	49.66	TRUE
Pseudoalteromonas sp. 09-YPC23	*Pseudoalteromonas* sp. 09-YP018	2.27	0	0.00625	3	49.66	TRUE
Pseudoalteromonas sp. 09-YPC23	*Pseudoalteromonas* sp. 09-YPC25	2.27	1.17	0.00625	3	24.10	TRUE
Pseudoalteromonas sp. 09-YPC23	*Pseudoalteromonas* sp. 09-YPC23	2.27	2.27	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPC23	*Pseudoalteromonas* sp. 09-YPO19	2.27	0	0.00625	3	49.66	TRUE
Pseudoalteromonas sp. 09-YPC23	*Pseudoalteromonas* sp. 10B-YPO11	2.27	0	0.00625	3	49.66	TRUE
Pseudoalteromonas sp. 09-YPC23	*Pseudoalteromonas* sp. 09-YPC29	2.27	0.77	0.00625	3	32.86	TRUE
Pseudoalteromonas sp. 09-YPC23	*Pseudoalteromonas* sp. 06-SWC23	2.27	0	0.00625	3	49.66	TRUE
Pseudoalteromonas sp. 09-YPC23	*Pseudoalteromonas* sp. 02-YPC22	2.27	0	0.00625	3	49.66	TRUE
Pseudoalteromonas sp. 09-YPC23	*Pseudoalteromonas* sp. 11-YP013	2.27	0	0.00625	3	49.66	TRUE
Pseudoalteromonas sp. 09-YPC23	*Pseudoalteromonas* sp. 11-YPC25	2.27	0	0.00625	3	49.66	TRUE
Pseudoalteromonas sp. 09-YPC23	*Pseudoalteromonas* sp. 09-YP001	2.27	0	0.00625	3	49.66	TRUE
Pseudoalteromonas sp. 09-YPC23	*Pseudoalteromonas* sp. 11-YP016	2.27	0	0.00625	3	49.66	TRUE
Pseudoalteromonas sp. 09-YPC23	*Bacillus* sp. 06-YP001	2.27	0	0.00625	3	49.66	TRUE
Pseudoalteromonas sp. 09-YPC23	*Loktanella maritima* 06-YPC210	2.27	0	0.00625	3	49.66	TRUE
Pseudoalteromonas sp. 09-YPC23	*Loktanella maritima* 06-YPC211	2.27	0	0.00625	3	49.66	TRUE
Pseudoalteromonas sp. 09-YPC23	*Cobetia* sp. 10B-YPC21	2.27	0	0.00625	3	49.66	TRUE
Pseudoalteromonas sp. 09-YPC23	*Altermonas* sp. 03-YPC23	2.27	0	0.00625	3	49.66	TRUE
Pseudoalteromonas sp. 09-YPO19	*Pseudoalteromonas* sp. 08-SWC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPO19	*Pseudoalteromonas* sp. 08-YPC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPO19	*Pseudoalteromonas* sp. 08-SWC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPO19	*Pseudoalteromonas* sp. 03-YP014	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPO19	*Pseudoalteromonas* sp. 02-YP012	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPO19	*Pseudoalteromonas* sp. 06-YPC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPO19	*Pseudoalteromonas* sp. 06-YPC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPO19	*Pseudoalteromonas* sp. 09-YP018	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPO19	*Pseudoalteromonas* sp. 09-YPC25	0	1.17	0.00625	3	25.56	TRUE
Pseudoalteromonas sp. 09-YPO19	*Pseudoalteromonas* sp. 09-YPC23	0	2.27	0.00625	3	49.66	TRUE
Pseudoalteromonas sp. 09-YPO19	*Pseudoalteromonas* sp. 09-YPO19	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPO19	*Pseudoalteromonas* sp. 10B-YPO11	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPO19	*Pseudoalteromonas* sp. 09-YPC29	0	0.77	0.00625	3	16.80	TRUE

Group 1 (M1)	Group 2 (M2)	M1	M2	MSw	N	Tukey's HSD q[a]	Signifcance[b]
Pseudoalteromonas sp. 09-YPO19	*Pseudoalteromonas* sp. 06-SWC23	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPO19	*Pseudoalteromonas* sp. 02-YPC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPO19	*Pseudoalteromonas* sp. 11-YP013	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPO19	*Pseudoalteromonas* sp. 11-YPC25	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPO19	*Pseudoalteromonas* sp. 09-YP001	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPO19	*Pseudoalteromonas* sp. 11-YP016	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPO19	*Bacillus* sp. 06-YP001	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPO19	*Loktanella maritima* 06-YPC210	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPO19	*Loktanella maritima* 06-YPC211	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPO19	*Cobetia* sp. 10B-YPC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPO19	*Altermonas* sp. 03-YPC23	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp.10B-YPO11	*Pseudoalteromonas* sp. 08-SWC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp.10B-YPO11	*Pseudoalteromonas* sp. 08-YPC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp.10B-YPO11	*Pseudoalteromonas* sp. 08-SWC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp.10B-YPO11	*Pseudoalteromonas* sp. 03-YP014	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp.10B-YPO11	*Pseudoalteromonas* sp. 02-YP012	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp.10B-YPO11	*Pseudoalteromonas* sp. 06-YPC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp.10B-YPO11	*Pseudoalteromonas* sp. 06-YPC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp.10B-YPO11	*Pseudoalteromonas* sp. 09-YP018	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp.10B-YPO11	*Pseudoalteromonas* sp. 09-YPC25	0	1.17	0.00625	3	25.56	TRUE
Pseudoalteromonas sp.10B-YPO11	*Pseudoalteromonas* sp. 09-YPC23	0	2.27	0.00625	3	49.66	TRUE
Pseudoalteromonas sp.10B-YPO11	*Pseudoalteromonas* sp. 09-YPO19	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp.10B-YPO11	*Pseudoalteromonas* sp. 10B-YPO11	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp.10B-YPO11	*Pseudoalteromonas* sp. 09-YPC29	0	0.77	0.00625	3	16.80	TRUE
Pseudoalteromonas sp.10B-YPO11	*Pseudoalteromonas* sp. 06-SWC23	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp.10B-YPO11	*Pseudoalteromonas* sp. 02-YPC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp.10B-YPO11	*Pseudoalteromonas* sp. 11-YP013	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp.10B-YPO11	*Pseudoalteromonas* sp. 11-YPC25	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp.10B-YPO11	*Pseudoalteromonas* sp. 09-YP001	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp.10B-YPO11	*Pseudoalteromonas* sp. 11-YP016	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp.10B-YPO11	*Bacillus* sp. 06-YP001	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp.10B-YPO11	*Loktanella maritima* 06-YPC210	0	0	0.00625	3	0.00	FALSE

Group 1 (M1)	Group 2 (M2)	M1	M2	MSw	N	Tukey's HSD q[a]	Signifcance[b]
Pseudoalteromonas sp.10B-YPO11	*Loktanella maritima* 06-YPC211	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp.10B-YPO11	*Cobetia* sp. 10B-YPC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp.10B-YPO11	*Altermonas* sp. 03-YPC23	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPC29	*Pseudoalteromonas* sp. 08-SWC22	0.77	0	0.00625	3	16.80	TRUE
Pseudoalteromonas sp. 09-YPC29	*Pseudoalteromonas* sp. 08-YPC21	0.77	0	0.00625	3	16.80	TRUE
Pseudoalteromonas sp. 09-YPC29	*Pseudoalteromonas* sp. 08-SWC21	0.77	0	0.00625	3	16.80	TRUE
Pseudoalteromonas sp. 09-YPC29	*Pseudoalteromonas* sp. 03-YP014	0.77	0	0.00625	3	16.80	TRUE
Pseudoalteromonas sp. 09-YPC29	*Pseudoalteromonas* sp. 02-YP012	0.77	0	0.00625	3	16.80	TRUE
Pseudoalteromonas sp. 09-YPC29	*Pseudoalteromonas* sp. 06-YPC22	0.77	0	0.00625	3	16.80	TRUE
Pseudoalteromonas sp. 09-YPC29	*Pseudoalteromonas* sp. 06-YPC21	0.77	0	0.00625	3	16.80	TRUE
Pseudoalteromonas sp. 09-YPC29	*Pseudoalteromonas* sp. 09-YP018	0.77	0	0.00625	3	16.80	TRUE
Pseudoalteromonas sp. 09-YPC29	*Pseudoalteromonas* sp. 09-YPC25	0.77	1.17	0.00625	3	8.76	TRUE
Pseudoalteromonas sp. 09-YPC29	*Pseudoalteromonas* sp. 09-YPC23	0.77	2.27	0.00625	3	32.86	TRUE
Pseudoalteromonas sp. 09-YPC29	*Pseudoalteromonas* sp. 09-YPO19	0.77	0	0.00625	3	16.80	TRUE
Pseudoalteromonas sp. 09-YPC29	*Pseudoalteromonas* sp. 10B-YPO11	0.77	0	0.00625	3	16.80	TRUE
Pseudoalteromonas sp. 09-YPC29	*Pseudoalteromonas* sp. 09-YPC29	0.77	0.77	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPC29	*Pseudoalteromonas* sp. 06-SWC23	0.77	0	0.00625	3	16.80	TRUE
Pseudoalteromonas sp. 09-YPC29	*Pseudoalteromonas* sp. 02-YPC22	0.77	0	0.00625	3	16.80	TRUE
Pseudoalteromonas sp. 09-YPC29	*Pseudoalteromonas* sp. 11-YP013	0.77	0	0.00625	3	16.80	TRUE
Pseudoalteromonas sp. 09-YPC29	*Pseudoalteromonas* sp. 11-YPC25	0.77	0	0.00625	3	16.80	TRUE
Pseudoalteromonas sp. 09-YPC29	*Pseudoalteromonas* sp. 09-YP001	0.77	0	0.00625	3	16.80	TRUE
Pseudoalteromonas sp. 09-YPC29	*Pseudoalteromonas* sp. 11-YP016	0.77	0	0.00625	3	16.80	TRUE
Pseudoalteromonas sp. 09-YPC29	*Bacillus* sp. 06-YP001	0.77	0	0.00625	3	16.80	TRUE
Pseudoalteromonas sp. 09-YPC29	*Loktanella maritima* 06-YPC210	0.77	0	0.00625	3	16.80	TRUE
Pseudoalteromonas sp. 09-YPC29	*Loktanella maritima* 06-YPC211	0.77	0	0.00625	3	16.80	TRUE
Pseudoalteromonas sp. 09-YPC29	*Cobetia* sp. 10B-YPC21	0.77	0	0.00625	3	16.80	TRUE
Pseudoalteromonas sp. 09-YPC29	*Altermonas* sp. 03-YPC23	0.77	0	0.00625	3	16.80	TRUE
Pseudoalteromonas sp. 06-SWC23	*Pseudoalteromonas* sp. 08-SWC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-SWC23	*Pseudoalteromonas* sp. 08-YPC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-SWC23	*Pseudoalteromonas* sp. 08-SWC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-SWC23	*Pseudoalteromonas* sp. 03-YP014	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-SWC23	*Pseudoalteromonas* sp. 02-YP012	0	0	0.00625	3	0.00	FALSE

Group 1 (M1)	Group 2 (M2)	M1	M2	MSw	N	Tukey's HSD q[a]	Signifcance[b]
Pseudoalteromonas sp. 06-SWC23	*Pseudoalteromonas* sp. 06-YPC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-SWC23	*Pseudoalteromonas* sp. 06-YPC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-SWC23	*Pseudoalteromonas* sp. 09-YP018	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-SWC23	*Pseudoalteromonas* sp. 09-YPC25	0	1.17	0.00625	3	25.63	TRUE
Pseudoalteromonas sp. 06-SWC23	*Pseudoalteromonas* sp. 09-YPC23	0	2.27	0.00625	3	49.73	TRUE
Pseudoalteromonas sp. 06-SWC23	*Pseudoalteromonas* sp. 09-YPO19	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-SWC23	*Pseudoalteromonas* sp. 10B-YPO11	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-SWC23	*Pseudoalteromonas* sp. 09-YPC29	0	0.77	0.00625	3	16.87	TRUE
Pseudoalteromonas sp. 06-SWC23	*Pseudoalteromonas* sp. 06-SWC23	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-SWC23	*Pseudoalteromonas* sp. 02-YPC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-SWC23	*Pseudoalteromonas* sp. 11-YP013	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-SWC23	*Pseudoalteromonas* sp. 11-YPC25	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-SWC23	*Pseudoalteromonas* sp. 09-YP001	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-SWC23	*Pseudoalteromonas* sp. 11-YP016	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-SWC23	*Bacillus* sp. 06-YP001	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-SWC23	*Loktanella maritima* 06-YPC210	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-SWC23	*Loktanella maritima* 06-YPC211	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-SWC23	*Cobetia* sp. 10B-YPC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-SWC23	*Altermonas* sp. 03-YPC23	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 02-YPC22	*Pseudoalteromonas* sp. 08-SWC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 02-YPC22	*Pseudoalteromonas* sp. 08-YPC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 02-YPC22	*Pseudoalteromonas* sp. 08-SWC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 02-YPC22	*Pseudoalteromonas* sp. 03-YP014	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 02-YPC22	*Pseudoalteromonas* sp. 02-YP012	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 02-YPC22	*Pseudoalteromonas* sp. 06-YPC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 02-YPC22	*Pseudoalteromonas* sp. 06-YPC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 02-YPC22	*Pseudoalteromonas* sp. 09-YP018	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 02-YPC22	*Pseudoalteromonas* sp. 09-YPC25	0	1.17	0.00625	3	25.63	TRUE
Pseudoalteromonas sp. 02-YPC22	*Pseudoalteromonas* sp. 09-YPC23	0	2.27	0.00625	3	49.73	TRUE
Pseudoalteromonas sp. 02-YPC22	*Pseudoalteromonas* sp. 09-YPO19	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 02-YPC22	*Pseudoalteromonas* sp. 10B-YPO11	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 02-YPC22	*Pseudoalteromonas* sp. 09-YPC29	0	0.77	0.00625	3	16.87	TRUE

Group 1 (M1)	Group 2 (M2)	M1	M2	MSw	N	Tukey's HSD q[a]	Signifcance[b]
Pseudoalteromonas sp. 02-YPC22	*Pseudoalteromonas* sp. 06-SWC23	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 02-YPC22	*Pseudoalteromonas* sp. 02-YPC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 02-YPC22	*Pseudoalteromonas* sp. 11-YP013	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 02-YPC22	*Pseudoalteromonas* sp. 11-YPC25	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 02-YPC22	*Pseudoalteromonas* sp. 09-YP001	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 02-YPC22	*Pseudoalteromonas* sp. 11-YP016	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 02-YPC22	*Bacillus* sp. 06-YP001	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 02-YPC22	*Loktanella maritima* 06-YPC210	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 02-YPC22	*Loktanella maritima* 06-YPC211	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 02-YPC22	*Cobetia* sp. 10B-YPC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 02-YPC22	*Altermonas* sp. 03-YPC23	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YP013	*Pseudoalteromonas* sp. 08-SWC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YP013	*Pseudoalteromonas* sp. 08-YPC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YP013	*Pseudoalteromonas* sp. 08-SWC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YP013	*Pseudoalteromonas* sp. 03-YP014	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YP013	*Pseudoalteromonas* sp. 02-YP012	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YP013	*Pseudoalteromonas* sp. 06-YPC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YP013	*Pseudoalteromonas* sp. 06-YPC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YP013	*Pseudoalteromonas* sp. 09-YP018	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YP013	*Pseudoalteromonas* sp. 09-YPC25	0	1.17	0.00625	3	25.63	TRUE
Pseudoalteromonas sp. 11-YP013	*Pseudoalteromonas* sp. 09-YPC23	0	2.27	0.00625	3	49.73	TRUE
Pseudoalteromonas sp. 11-YP013	*Pseudoalteromonas* sp. 09-YPO19	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YP013	*Pseudoalteromonas* sp. 10B-YPO11	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YP013	*Pseudoalteromonas* sp. 09-YPC29	0	0.77	0.00625	3	16.87	TRUE
Pseudoalteromonas sp. 11-YP013	*Pseudoalteromonas* sp. 06-SWC23	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YP013	*Pseudoalteromonas* sp. 02-YPC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YP013	*Pseudoalteromonas* sp. 11-YP013	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YP013	*Pseudoalteromonas* sp. 11-YPC25	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YP013	*Pseudoalteromonas* sp. 09-YP001	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YP013	*Pseudoalteromonas* sp. 11-YP016	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YP013	*Bacillus* sp. 06-YP001	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YP013	*Loktanella maritima* 06-YPC210	0	0	0.00625	3	0.00	FALSE

Group 1 (M1)	Group 2 (M2)	M1	M2	MSw	N	Tukey's HSD q[a]	Signifcance[b]
Pseudoalteromonas sp. 11-YP013	*Loktanella maritima* 06-YPC211	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YP013	*Cobetia* sp. 10B-YPC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YP013	*Altermonas* sp. 03-YPC23	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YPC25	*Pseudoalteromonas* sp. 08-SWC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YPC25	*Pseudoalteromonas* sp. 08-YPC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YPC25	*Pseudoalteromonas* sp. 08-SWC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YPC25	*Pseudoalteromonas* sp. 03-YP014	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YPC25	*Pseudoalteromonas* sp. 02-YP012	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YPC25	*Pseudoalteromonas* sp. 06-YPC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YPC25	*Pseudoalteromonas* sp. 06-YPC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YPC25	*Pseudoalteromonas* sp. 09-YP018	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YPC25	*Pseudoalteromonas* sp. 09-YPC25	0	1.17	0.00625	3	25.63	TRUE
Pseudoalteromonas sp. 11-YPC25	*Pseudoalteromonas* sp. 09-YPC23	0	2.27	0.00625	3	49.73	TRUE
Pseudoalteromonas sp. 11-YPC25	*Pseudoalteromonas* sp. 09-YPO19	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YPC25	*Pseudoalteromonas* sp. 10B-YPO11	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YPC25	*Pseudoalteromonas* sp. 09-YPC29	0	0.77	0.00625	3	16.87	TRUE
Pseudoalteromonas sp. 11-YPC25	*Pseudoalteromonas* sp. 06-SWC23	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YPC25	*Pseudoalteromonas* sp. 02-YPC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YPC25	*Pseudoalteromonas* sp. 11-YP013	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YPC25	*Pseudoalteromonas* sp. 11-YPC25	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YPC25	*Pseudoalteromonas* sp. 09-YP001	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YPC25	*Pseudoalteromonas* sp. 11-YP016	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YPC25	*Bacillus* sp. 06-YP001	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YPC25	*Loktanella maritima* 06-YPC210	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YPC25	*Loktanella maritima* 06-YPC211	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YPC25	*Cobetia* sp. 10B-YPC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YPC25	*Altermonas* sp. 03-YPC23	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YP001	*Pseudoalteromonas* sp. 08-SWC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YP001	*Pseudoalteromonas* sp. 08-YPC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YP001	*Pseudoalteromonas* sp. 08-SWC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YP001	*Pseudoalteromonas* sp. 03-YP014	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YP001	*Pseudoalteromonas* sp. 02-YP012	0	0	0.00625	3	0.00	FALSE

Group 1 (M1)	Group 2 (M2)	M1	M2	MSw	N	Tukey's HSD q[a]	Signifcance[b]
Pseudoalteromonas sp. 09-YP001	*Pseudoalteromonas* sp. 06-YPC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YP001	*Pseudoalteromonas* sp. 06-YPC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YP001	*Pseudoalteromonas* sp. 09-YP018	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YP001	*Pseudoalteromonas* sp. 09-YPC25	0	1.17	0.00625	3	25.63	TRUE
Pseudoalteromonas sp. 09-YP001	*Pseudoalteromonas* sp. 09-YPC23	0	2.27	0.00625	3	49.73	TRUE
Pseudoalteromonas sp. 09-YP001	*Pseudoalteromonas* sp. 09-YPO19	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YP001	*Pseudoalteromonas* sp. 10B-YPO11	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YP001	*Pseudoalteromonas* sp. 09-YPC29	0	0.77	0.00625	3	16.87	TRUE
Pseudoalteromonas sp. 09-YP001	*Pseudoalteromonas* sp. 06-SWC23	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YP001	*Pseudoalteromonas* sp. 02-YPC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YP001	*Pseudoalteromonas* sp. 11-YP013	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YP001	*Pseudoalteromonas* sp. 11-YPC25	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YP001	*Pseudoalteromonas* sp. 09-YP001	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YP001	*Pseudoalteromonas* sp. 11-YP016	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YP001	*Bacillus* sp. 06-YP001	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YP001	*Loktanella maritima* 06-YPC210	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YP001	*Loktanella maritima* 06-YPC211	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YP001	*Cobetia* sp. 10B-YPC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YP001	*Altermonas* sp. 03-YPC23	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YP016	*Pseudoalteromonas* sp. 08-SWC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YP016	*Pseudoalteromonas* sp. 08-YPC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YP016	*Pseudoalteromonas* sp. 08-SWC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YP016	*Pseudoalteromonas* sp. 03-YP014	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YP016	*Pseudoalteromonas* sp. 02-YP012	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YP016	*Pseudoalteromonas* sp. 06-YPC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YP016	*Pseudoalteromonas* sp. 06-YPC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YP016	*Pseudoalteromonas* sp. 09-YP018	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YP016	*Pseudoalteromonas* sp. 09-YPC25	0	1.17	0.00625	3	25.63	TRUE
Pseudoalteromonas sp. 11-YP016	*Pseudoalteromonas* sp. 09-YPC23	0	2.27	0.00625	3	49.73	TRUE
Pseudoalteromonas sp. 11-YP016	*Pseudoalteromonas* sp. 09-YPO19	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YP016	*Pseudoalteromonas* sp. 10B-YPO11	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YP016	*Pseudoalteromonas* sp. 09-YPC29	0	0.77	0.00625	3	16.87	TRUE

Group 1 (M1)	Group 2 (M2)	M1	M2	MSw	N	Tukey's HSD q[a]	Signifcance[b]
Pseudoalteromonas sp. 11-YP016	*Pseudoalteromonas* sp. 06-SWC23	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YP016	*Pseudoalteromonas* sp. 02-YPC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YP016	*Pseudoalteromonas* sp. 11-YP013	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YP016	*Pseudoalteromonas* sp. 11-YPC25	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YP016	*Pseudoalteromonas* sp. 09-YP001	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YP016	*Pseudoalteromonas* sp. 11-YP016	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YP016	*Bacillus* sp. 06-YP001	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YP016	*Loktanella maritima* 06-YPC210	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YP016	*Loktanella maritima* 06-YPC211	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YP016	*Cobetia* sp. 10B-YPC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YP016	*Altermonas* sp. 03-YPC23	0	0	0.00625	3	0.00	FALSE
Bacillus sp. 06-YP001	*Pseudoalteromonas* sp. 08-SWC22	0	0	0.00625	3	0.00	FALSE
Bacillus sp. 06-YP001	*Pseudoalteromonas* sp. 08-YPC21	0	0	0.00625	3	0.00	FALSE
Bacillus sp. 06-YP001	*Pseudoalteromonas* sp. 08-SWC21	0	0	0.00625	3	0.00	FALSE
Bacillus sp. 06-YP001	*Pseudoalteromonas* sp. 03-YP014	0	0	0.00625	3	0.00	FALSE
Bacillus sp. 06-YP001	*Pseudoalteromonas* sp. 02-YP012	0	0	0.00625	3	0.00	FALSE
Bacillus sp. 06-YP001	*Pseudoalteromonas* sp. 06-YPC22	0	0	0.00625	3	0.00	FALSE
Bacillus sp. 06-YP001	*Pseudoalteromonas* sp. 06-YPC21	0	0	0.00625	3	0.00	FALSE
Bacillus sp. 06-YP001	*Pseudoalteromonas* sp. 09-YP018	0	0	0.00625	3	0.00	FALSE
Bacillus sp. 06-YP001	*Pseudoalteromonas* sp. 09-YPC25	0	1.17	0.00625	3	25.63	TRUE
Bacillus sp. 06-YP001	*Pseudoalteromonas* sp. 09-YPC23	0	2.27	0.00625	3	49.73	TRUE
Bacillus sp. 06-YP001	*Pseudoalteromonas* sp. 09-YPO19	0	0	0.00625	3	0.00	FALSE
Bacillus sp. 06-YP001	*Pseudoalteromonas* sp. 10B-YPO11	0	0	0.00625	3	0.00	FALSE
Bacillus sp. 06-YP001	*Pseudoalteromonas* sp. 09-YPC29	0	0.77	0.00625	3	16.87	TRUE
Bacillus sp. 06-YP001	*Pseudoalteromonas* sp. 06-SWC23	0	0	0.00625	3	0.00	FALSE
Bacillus sp. 06-YP001	*Pseudoalteromonas* sp. 02-YPC22	0	0	0.00625	3	0.00	FALSE
Bacillus sp. 06-YP001	*Pseudoalteromonas* sp. 11-YP013	0	0	0.00625	3	0.00	FALSE
Bacillus sp. 06-YP001	*Pseudoalteromonas* sp. 11-YPC25	0	0	0.00625	3	0.00	FALSE
Bacillus sp. 06-YP001	*Pseudoalteromonas* sp. 09-YP001	0	0	0.00625	3	0.00	FALSE
Bacillus sp. 06-YP001	*Pseudoalteromonas* sp. 11-YP016	0	0	0.00625	3	0.00	FALSE
Bacillus sp. 06-YP001	*Bacillus* sp. 06-YP001	0	0	0.00625	3	0.00	FALSE
Bacillus sp. 06-YP001	*Loktanella maritima* 06-YPC210	0	0	0.00625	3	0.00	FALSE

Group 1 (M1)	Group 2 (M2)	M1	M2	MSw	N	Tukey's HSD q[a]	Signifcance[b]
Bacillus sp. 06-YP001	*Loktanella maritima* 06-YPC211	0	0	0.00625	3	0.00	FALSE
Bacillus sp. 06-YP001	*Cobetia* sp. 10B-YPC21	0	0	0.00625	3	0.00	FALSE
Bacillus sp. 06-YP001	*Altermonas* sp. 03-YPC23	0	0	0.00625	3	0.00	FALSE
Loktanella maritima 06-YPC210	*Pseudoalteromonas* sp. 08-SWC22	0	0	0.00625	3	0.00	FALSE
Loktanella maritima 06-YPC210	*Pseudoalteromonas* sp. 08-YPC21	0	0	0.00625	3	0.00	FALSE
Loktanella maritima 06-YPC210	*Pseudoalteromonas* sp. 08-SWC21	0	0	0.00625	3	0.00	FALSE
Loktanella maritima 06-YPC210	*Pseudoalteromonas* sp. 03-YP014	0	0	0.00625	3	0.00	FALSE
Loktanella maritima 06-YPC210	*Pseudoalteromonas* sp. 02-YP012	0	0	0.00625	3	0.00	FALSE
Loktanella maritima 06-YPC210	*Pseudoalteromonas* sp. 06-YPC22	0	0	0.00625	3	0.00	FALSE
Loktanella maritima 06-YPC210	*Pseudoalteromonas* sp. 06-YPC21	0	0	0.00625	3	0.00	FALSE
Loktanella maritima 06-YPC210	*Pseudoalteromonas* sp. 09-YP018	0	0	0.00625	3	0.00	FALSE
Loktanella maritima 06-YPC210	*Pseudoalteromonas* sp. 09-YPC25	0	1.17	0.00625	3	25.63	TRUE
Loktanella maritima 06-YPC210	*Pseudoalteromonas* sp. 09-YPC23	0	2.27	0.00625	3	49.73	TRUE
Loktanella maritima 06-YPC210	*Pseudoalteromonas* sp. 09-YPO19	0	0	0.00625	3	0.00	FALSE
Loktanella maritima 06-YPC210	*Pseudoalteromonas* sp. 10B-YPO11	0	0	0.00625	3	0.00	FALSE
Loktanella maritima 06-YPC210	*Pseudoalteromonas* sp. 09-YPC29	0	0.77	0.00625	3	16.87	TRUE
Loktanella maritima 06-YPC210	*Pseudoalteromonas* sp. 06-SWC23	0	0	0.00625	3	0.00	FALSE
Loktanella maritima 06-YPC210	*Pseudoalteromonas* sp. 02-YPC22	0	0	0.00625	3	0.00	FALSE
Loktanella maritima 06-YPC210	*Pseudoalteromonas* sp. 11-YP013	0	0	0.00625	3	0.00	FALSE
Loktanella maritima 06-YPC210	*Pseudoalteromonas* sp. 11-YPC25	0	0	0.00625	3	0.00	FALSE
Loktanella maritima 06-YPC210	*Pseudoalteromonas* sp. 09-YP001	0	0	0.00625	3	0.00	FALSE
Loktanella maritima 06-YPC210	*Pseudoalteromonas* sp. 11-YP016	0	0	0.00625	3	0.00	FALSE
Loktanella maritima 06-YPC210	*Bacillus* sp. 06-YP001	0	0	0.00625	3	0.00	FALSE
Loktanella maritima 06-YPC210	*Loktanella maritima* 06-YPC210	0	0	0.00625	3	0.00	FALSE
Loktanella maritima 06-YPC210	*Loktanella maritima* 06-YPC211	0	0	0.00625	3	0.00	FALSE
Loktanella maritima 06-YPC210	*Cobetia* sp. 10B-YPC21	0	0	0.00625	3	0.00	FALSE
Loktanella maritima 06-YPC210	*Altermonas* sp. 03-YPC23	0	0	0.00625	3	0.00	FALSE
Loktanella maritima 06-YPC211	*Pseudoalteromonas* sp. 08-SWC22	0	0	0.00625	3	0.00	FALSE
Loktanella maritima 06-YPC211	*Pseudoalteromonas* sp. 08-YPC21	0	0	0.00625	3	0.00	FALSE
Loktanella maritima 06-YPC211	*Pseudoalteromonas* sp. 08-SWC21	0	0	0.00625	3	0.00	FALSE
Loktanella maritima 06-YPC211	*Pseudoalteromonas* sp. 03-YP014	0	0	0.00625	3	0.00	FALSE
Loktanella maritima 06-YPC211	*Pseudoalteromonas* sp. 02-YP012	0	0	0.00625	3	0.00	FALSE

Group 1 (M1)	Group 2 (M2)	M1	M2	MSw	N	Tukey's HSD q[a]	Signifcance[b]
Loktanella maritima 06-YPC211	*Pseudoalteromonas* sp. 06-YPC22	0	0	0.00625	3	0.00	FALSE
Loktanella maritima 06-YPC211	*Pseudoalteromonas* sp. 06-YPC21	0	0	0.00625	3	0.00	FALSE
Loktanella maritima 06-YPC211	*Pseudoalteromonas* sp. 09-YP018	0	0	0.00625	3	0.00	FALSE
Loktanella maritima 06-YPC211	*Pseudoalteromonas* sp. 09-YPC25	0	1.17	0.00625	3	25.63	TRUE
Loktanella maritima 06-YPC211	*Pseudoalteromonas* sp. 09-YPC23	0	2.27	0.00625	3	49.73	TRUE
Loktanella maritima 06-YPC211	*Pseudoalteromonas* sp. 09-YPO19	0	0	0.00625	3	0.00	FALSE
Loktanella maritima 06-YPC211	*Pseudoalteromonas* sp. 10B-YPO11	0	0	0.00625	3	0.00	FALSE
Loktanella maritima 06-YPC211	*Pseudoalteromonas* sp. 09-YPC29	0	0.77	0.00625	3	16.87	TRUE
Loktanella maritima 06-YPC211	*Pseudoalteromonas* sp. 06-SWC23	0	0	0.00625	3	0.00	FALSE
Loktanella maritima 06-YPC211	*Pseudoalteromonas* sp. 02-YPC22	0	0	0.00625	3	0.00	FALSE
Loktanella maritima 06-YPC211	*Pseudoalteromonas* sp. 11-YP013	0	0	0.00625	3	0.00	FALSE
Loktanella maritima 06-YPC211	*Pseudoalteromonas* sp. 11-YPC25	0	0	0.00625	3	0.00	FALSE
Loktanella maritima 06-YPC211	*Pseudoalteromonas* sp. 09-YP001	0	0	0.00625	3	0.00	FALSE
Loktanella maritima 06-YPC211	*Pseudoalteromonas* sp. 11-YP016	0	0	0.00625	3	0.00	FALSE
Loktanella maritima 06-YPC211	*Bacillus* sp. 06-YP001	0	0	0.00625	3	0.00	FALSE
Loktanella maritima 06-YPC211	*Loktanella maritima* 06-YPC210	0	0	0.00625	3	0.00	FALSE
Loktanella maritima 06-YPC211	*Loktanella maritima* 06-YPC211	0	0	0.00625	3	0.00	FALSE
Loktanella maritima 06-YPC211	*Cobetia* sp. 10B-YPC21	0	0	0.00625	3	0.00	FALSE
Loktanella maritima 06-YPC211	*Altermonas* sp. 03-YPC23	0	0	0.00625	3	0.00	FALSE
Cobetia sp. 10B-YPC21	*Pseudoalteromonas* sp. 08-SWC22	0	0	0.00625	3	0.00	FALSE
Cobetia sp. 10B-YPC21	*Pseudoalteromonas* sp. 08-YPC21	0	0	0.00625	3	0.00	FALSE
Cobetia sp. 10B-YPC21	*Pseudoalteromonas* sp. 08-SWC21	0	0	0.00625	3	0.00	FALSE
Cobetia sp. 10B-YPC21	*Pseudoalteromonas* sp. 03-YP014	0	0	0.00625	3	0.00	FALSE
Cobetia sp. 10B-YPC21	*Pseudoalteromonas* sp. 02-YP012	0	0	0.00625	3	0.00	FALSE
Cobetia sp. 10B-YPC21	*Pseudoalteromonas* sp. 06-YPC22	0	0	0.00625	3	0.00	FALSE
Cobetia sp. 10B-YPC21	*Pseudoalteromonas* sp. 06-YPC21	0	0	0.00625	3	0.00	FALSE
Cobetia sp. 10B-YPC21	*Pseudoalteromonas* sp. 09-YP018	0	0	0.00625	3	0.00	FALSE
Cobetia sp. 10B-YPC21	*Pseudoalteromonas* sp. 09-YPC25	0	1.17	0.00625	3	25.63	TRUE
Cobetia sp. 10B-YPC21	*Pseudoalteromonas* sp. 09-YPC23	0	2.27	0.00625	3	49.73	TRUE
Cobetia sp. 10B-YPC21	*Pseudoalteromonas* sp. 09-YPO19	0	0	0.00625	3	0.00	FALSE
Cobetia sp. 10B-YPC21	*Pseudoalteromonas* sp. 10B-YPO11	0	0	0.00625	3	0.00	FALSE
Cobetia sp. 10B-YPC21	*Pseudoalteromonas* sp. 09-YPC29	0	0.77	0.00625	3	16.87	TRUE

Group 1 (M1)	Group 2 (M2)	M1	M2	MSw	N	Tukey's HSD q[a]	Signifcance[b]
Cobetia sp. 10B-YPC21	*Pseudoalteromonas* sp. 06-SWC23	0	0	0.00625	3	0.00	FALSE
Cobetia sp. 10B-YPC21	*Pseudoalteromonas* sp. 02-YPC22	0	0	0.00625	3	0.00	FALSE
Cobetia sp. 10B-YPC21	*Pseudoalteromonas* sp. 11-YP013	0	0	0.00625	3	0.00	FALSE
Cobetia sp. 10B-YPC21	*Pseudoalteromonas* sp. 11-YPC25	0	0	0.00625	3	0.00	FALSE
Cobetia sp. 10B-YPC21	*Pseudoalteromonas* sp. 09-YP001	0	0	0.00625	3	0.00	FALSE
Cobetia sp. 10B-YPC21	*Pseudoalteromonas* sp. 11-YP016	0	0	0.00625	3	0.00	FALSE
Cobetia sp. 10B-YPC21	*Bacillus* sp. 06-YP001	0	0	0.00625	3	0.00	FALSE
Cobetia sp. 10B-YPC21	*Loktanella maritima* 06-YPC210	0	0	0.00625	3	0.00	FALSE
Cobetia sp. 10B-YPC21	*Loktanella maritima* 06-YPC211	0	0	0.00625	3	0.00	FALSE
Cobetia sp. 10B-YPC21	*Cobetia* sp. 10B-YPC21	0	0	0.00625	3	0.00	FALSE
Cobetia sp. 10B-YPC21	*Altermonas* sp. 03-YPC23	0	0	0.00625	3	0.00	FALSE
Altermonas sp. 03-YPC23	*Pseudoalteromonas* sp. 08-SWC22	0	0	0.00625	3	0.00	FALSE
Altermonas sp. 03-YPC23	*Pseudoalteromonas* sp. 08-YPC21	0	0	0.00625	3	0.00	FALSE
Altermonas sp. 03-YPC23	*Pseudoalteromonas* sp. 08-SWC21	0	0	0.00625	3	0.00	FALSE
Altermonas sp. 03-YPC23	*Pseudoalteromonas* sp. 03-YP014	0	0	0.00625	3	0.00	FALSE
Altermonas sp. 03-YPC23	*Pseudoalteromonas* sp. 02-YP012	0	0	0.00625	3	0.00	FALSE
Altermonas sp. 03-YPC23	*Pseudoalteromonas* sp. 06-YPC22	0	0	0.00625	3	0.00	FALSE
Altermonas sp. 03-YPC23	*Pseudoalteromonas* sp. 06-YPC21	0	0	0.00625	3	0.00	FALSE
Altermonas sp. 03-YPC23	*Pseudoalteromonas* sp. 09-YP018	0	0	0.00625	3	0.00	FALSE
Altermonas sp. 03-YPC23	*Pseudoalteromonas* sp. 09-YPC25	0	1.17	0.00625	3	25.63	TRUE
Altermonas sp. 03-YPC23	*Pseudoalteromonas* sp. 09-YPC23	0	2.27	0.00625	3	49.73	TRUE
Altermonas sp. 03-YPC23	*Pseudoalteromonas* sp. 09-YPO19	0	0	0.00625	3	0.00	FALSE
Altermonas sp. 03-YPC23	*Pseudoalteromonas* sp. 10B-YPO11	0	0	0.00625	3	0.00	FALSE
Altermonas sp. 03-YPC23	*Pseudoalteromonas* sp. 09-YPC29	0	0.77	0.00625	3	16.87	TRUE
Altermonas sp. 03-YPC23	*Pseudoalteromonas* sp. 06-SWC23	0	0	0.00625	3	0.00	FALSE
Altermonas sp. 03-YPC23	*Pseudoalteromonas* sp. 02-YPC22	0	0	0.00625	3	0.00	FALSE
Altermonas sp. 03-YPC23	*Pseudoalteromonas* sp. 11-YP013	0	0	0.00625	3	0.00	FALSE
Altermonas sp. 03-YPC23	*Pseudoalteromonas* sp. 11-YPC25	0	0	0.00625	3	0.00	FALSE
Altermonas sp. 03-YPC23	*Pseudoalteromonas* sp. 09-YP001	0	0	0.00625	3	0.00	FALSE
Altermonas sp. 03-YPC23	*Pseudoalteromonas* sp. 11-YP016	0	0	0.00625	3	0.00	FALSE
Altermonas sp. 03-YPC23	*Bacillus* sp. 06-YP001	0	0	0.00625	3	0.00	FALSE
Altermonas sp. 03-YPC23	*Loktanella maritima* 06-YPC210	0	0	0.00625	3	0.00	FALSE

Group 1 (M1)	Group 2 (M2)	M1	M2	MSw	N	Tukey's HSD q[a]	Signifcance[b]
Altermonas sp. 03-YPC23	*Loktanella maritima* 06-YPC211	0	0	0.00625	3	0.00	FALSE
Altermonas sp. 03-YPC23	*Cobetia* sp. 10B-YPC21	0	0	0.00625	3	0.00	FALSE
Altermonas sp. 03-YPC23	*Altermonas* sp. 03-YPC23	0	0	0.00625	3	0.00	FALSE

[a] Tukey 's HSD q= (M1- M2)/√(MSw x (1/n))

[b] True= Tukey 's HSD q>3.53 (blue highlight), False= Tukey 's HSD q<3.53

[c] Green highlight is comparison of self to self

Appendix 5. Tuckey Honest Significant Difference Test between ZOI (mm) against *A. homaria* 132.4

Group 1 (M1)	Group 2 (M2)	M1	M2	MSw	N	Tukey's HSD q[a]	Signifcance[b]
Pseudoalteromonas sp. 08-SWC22	*Pseudoalteromonas* sp. 08-SWC22[c]	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-SWC22	*Pseudoalteromonas* sp. 08-YPC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-SWC22	*Pseudoalteromonas* sp.08-SWC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-SWC22	*Pseudoalteromonas* sp. 03-YP014	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-SWC22	*Pseudoalteromonas* sp. 02-YP012	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-SWC22	*Pseudoalteromonas* sp. 06-YPC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-SWC22	*Pseudoalteromonas* sp. 06-YPC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-SWC22	*Pseudoalteromonas* sp. 09-YP018	0	1.67	0.00625	3	36.51	TRUE
Pseudoalteromonas sp. 08-SWC22	*Pseudoalteromonas* sp. 09-YPC25	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-SWC22	*Pseudoalteromonas* sp. 09-YPC23	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-SWC22	*Pseudoalteromonas* sp.09-YPO19	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-SWC22	*Pseudoalteromonas* sp. 10B-YPO11	0	3.17	0.00625	3	69.38	TRUE
Pseudoalteromonas sp. 08-SWC22	*Pseudoalteromonas* sp. 09-YPC29	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-SWC22	*Pseudoalteromonas* sp.06-SWC23	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-SWC22	*Pseudoalteromonas* sp. 02-YPC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-SWC22	*Pseudoalteromonas* sp. 11-YP013	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-SWC22	*Pseudoalteromonas* sp. 11-YPC25	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-SWC22	*Pseudoalteromonas* sp. 09-YP001	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-SWC22	*Pseudoalteromonas* sp. 11-YP016	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-SWC22	*Bacillus* sp. 06-YP001	0	4.33	0.00625	3	94.94	TRUE
Pseudoalteromonas sp. 08-SWC22	*Loktanella maritima* 06-YPC210	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-SWC22	*Loktanella maritima* 06-YPC211	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-SWC22	*Cobetia* sp. 10B-YPC21	0	2.17	0.00625	3	47.47	TRUE
Pseudoalteromonas sp. 08-SWC22	*Altermonas* sp. 03-YPC23	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-YPC21	*Pseudoalteromonas* sp.08-SWC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-YPC21	*Pseudoalteromonas* sp. 08-YPC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-YPC21	*Pseudoalteromonas* sp.08-SWC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-YPC21	*Pseudoalteromonas* sp. 03-YP014	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-YPC21	*Pseudoalteromonas* sp. 02-YP012	0	0	0.00625	3	0.00	FALSE

Group 1 (M1)	Group 2 (M2)	M1	M2	MSw	N	Tukey's HSD q[a]	Signifcance[b]
Pseudoalteromonas sp. 08-YPC21	*Pseudoalteromonas* sp. 06-YPC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-YPC21	*Pseudoalteromonas* sp. 06-YPC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-YPC21	*Pseudoalteromonas* sp. 09-YP018	0	1.67	0.00625	3	36.51	TRUE
Pseudoalteromonas sp. 08-YPC21	*Pseudoalteromonas* sp. 09-YPC25	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-YPC21	*Pseudoalteromonas* sp. 09-YPC23	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-YPC21	*Pseudoalteromonas* sp. 09-YPO19	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-YPC21	*Pseudoalteromonas* sp. 10B-YPO11	0	3.17	0.00625	3	69.38	TRUE
Pseudoalteromonas sp. 08-YPC21	*Pseudoalteromonas* sp. 09-YPC29	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-YPC21	*Pseudoalteromonas* sp.06-SWC23	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-YPC21	*Pseudoalteromonas* sp. 02-YPC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-YPC21	*Pseudoalteromonas* sp. 11-YP013	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-YPC21	*Pseudoalteromonas* sp. 11-YPC25	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-YPC21	*Pseudoalteromonas* sp. 09-YP001	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-YPC21	*Pseudoalteromonas* sp. 11-YP016	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-YPC21	*Bacillus* sp. 06-YP001	0	4.33	0.00625	3	94.94	TRUE
Pseudoalteromonas sp. 08-YPC21	*Loktanella maritima* 06-YPC210	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-YPC21	*Loktanella maritima* 06-YPC211	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-YPC21	*Cobetia* sp. 10B-YPC21	0	2.17	0.00625	3	47.47	TRUE
Pseudoalteromonas sp. 08-YPC21	*Altermonas* sp. 03-YPC23	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-SWC21	*Pseudoalteromonas* sp.08-SWC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-SWC21	*Pseudoalteromonas* sp. 08-YPC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-SWC21	*Pseudoalteromonas* sp.08-SWC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-SWC21	*Pseudoalteromonas* sp. 03-YP014	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-SWC21	*Pseudoalteromonas* sp. 02-YP012	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-SWC21	*Pseudoalteromonas* sp. 06-YPC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-SWC21	*Pseudoalteromonas* sp. 06-YPC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-SWC21	*Pseudoalteromonas* sp. 09-YP018	0	1.67	0.00625	3	36.51	TRUE
Pseudoalteromonas sp. 08-SWC21	*Pseudoalteromonas* sp. 09-YPC25	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-SWC21	*Pseudoalteromonas* sp. 09-YPC23	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-SWC21	*Pseudoalteromonas* sp. 09-YPO19	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-SWC21	*Pseudoalteromonas* sp. 10B-YPO11	0	3.17	0.00625	3	69.38	TRUE
Pseudoalteromonas sp. 08-SWC21	*Pseudoalteromonas* sp. 09-YPC29	0	0	0.00625	3	0.00	FALSE

Group 1 (M1)	Group 2 (M2)	M1	M2	MSw	N	Tukey's HSD q[a]	Signifcance[b]
Pseudoalteromonas sp. 08-SWC21	*Pseudoalteromonas* sp.06-SWC23	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-SWC21	*Pseudoalteromonas* sp. 02-YPC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-SWC21	*Pseudoalteromonas* sp. 11-YP013	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-SWC21	*Pseudoalteromonas* sp. 11-YPC25	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-SWC21	*Pseudoalteromonas* sp. 09-YP001	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-SWC21	*Pseudoalteromonas* sp. 11-YP016	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-SWC21	*Bacillus* sp. 06-YP001	0	4.33	0.00625	3	94.94	TRUE
Pseudoalteromonas sp. 08-SWC21	*Loktanella maritima* 06-YPC210	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-SWC21	*Loktanella maritima* 06-YPC211	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 08-SWC21	*Cobetia* sp. 10B-YPC21	0	2.17	0.00625	3	47.47	TRUE
Pseudoalteromonas sp. 08-SWC21	*Altermonas* sp. 03-YPC23	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 03-YP014	*Pseudoalteromonas* sp.08-SWC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 03-YP014	*Pseudoalteromonas* sp. 08-YPC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 03-YP014	*Pseudoalteromonas* sp.08-SWC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 03-YP014	*Pseudoalteromonas* sp. 03-YP014	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 03-YP014	*Pseudoalteromonas* sp. 02-YP012	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 03-YP014	*Pseudoalteromonas* sp. 06-YPC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 03-YP014	*Pseudoalteromonas* sp. 06-YPC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 03-YP014	*Pseudoalteromonas* sp. 09-YP018	0	1.67	0.00625	3	36.51	TRUE
Pseudoalteromonas sp. 03-YP014	*Pseudoalteromonas* sp. 09-YPC25	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 03-YP014	*Pseudoalteromonas* sp. 09-YPC23	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 03-YP014	*Pseudoalteromonas* sp. 09-YPO19	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 03-YP014	*Pseudoalteromonas* sp. 10B-YPO11	0	3.17	0.00625	3	69.38	TRUE
Pseudoalteromonas sp. 03-YP014	*Pseudoalteromonas* sp. 09-YPC29	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 03-YP014	*Pseudoalteromonas* sp.06-SWC23	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 03-YP014	*Pseudoalteromonas* sp. 02-YPC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 03-YP014	*Pseudoalteromonas* sp. 11-YP013	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 03-YP014	*Pseudoalteromonas* sp. 11-YPC25	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 03-YP014	*Pseudoalteromonas* sp. 09-YP001	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 03-YP014	*Pseudoalteromonas* sp. 11-YP016	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 03-YP014	*Bacillus* sp. 06-YP001	0	4.33	0.00625	3	94.94	TRUE
Pseudoalteromonas sp. 03-YP014	*Loktanella maritima* 06-YPC210	0	0	0.00625	3	0.00	FALSE

Group 1 (M1)	Group 2 (M2)	M1	M2	MSw	N	Tukey's HSD q[a]	Signifcance[b]
Pseudoalteromonas sp. 03-YP014	*Loktanella maritima* 06-YPC211	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 03-YP014	*Cobetia* sp. 10B-YPC21	0	2.17	0.00625	3	47.47	TRUE
Pseudoalteromonas sp. 03-YP014	*Altermonas* sp. 03-YPC23	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp.02-YP012	*Pseudoalteromonas* sp.08-SWC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp.02-YP012	*Pseudoalteromonas* sp. 08-YPC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp.02-YP012	*Pseudoalteromonas* sp.08-SWC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp.02-YP012	*Pseudoalteromonas* sp. 03-YP014	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp.02-YP012	*Pseudoalteromonas* sp. 02-YP012	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp.02-YP012	*Pseudoalteromonas* sp. 06-YPC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp.02-YP012	*Pseudoalteromonas* sp. 06-YPC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp.02-YP012	*Pseudoalteromonas* sp. 09-YP018	0	1.67	0.00625	3	36.51	TRUE
Pseudoalteromonas sp.02-YP012	*Pseudoalteromonas* sp. 09-YPC25	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp.02-YP012	*Pseudoalteromonas* sp. 09-YPC23	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp.02-YP012	*Pseudoalteromonas* sp. 09-YPO19	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp.02-YP012	*Pseudoalteromonas* sp. 10B-YPO11	0	3.17	0.00625	3	69.38	TRUE
Pseudoalteromonas sp.02-YP012	*Pseudoalteromonas* sp. 09-YPC29	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp.02-YP012	*Pseudoalteromonas* sp.06-SWC23	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp.02-YP012	*Pseudoalteromonas* sp. 02-YPC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp.02-YP012	*Pseudoalteromonas* sp. 11-YP013	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp.02-YP012	*Pseudoalteromonas* sp. 11-YPC25	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp.02-YP012	*Pseudoalteromonas* sp. 09-YP001	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp.02-YP012	*Pseudoalteromonas* sp. 11-YP016	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp.02-YP012	*Bacillus* sp. 06-YP001	0	4.33	0.00625	3	94.94	TRUE
Pseudoalteromonas sp.02-YP012	*Loktanella maritima* 06-YPC210	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp.02-YP012	*Loktanella maritima* 06-YPC211	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp.02-YP012	*Cobetia* sp. 10B-YPC21	0	2.17	0.00625	3	47.47	TRUE
Pseudoalteromonas sp.02-YP012	*Altermonas* sp. 03-YPC23	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-YPC22	*Pseudoalteromonas* sp.08-SWC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-YPC22	*Pseudoalteromonas* sp. 08-YPC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-YPC22	*Pseudoalteromonas* sp.08-SWC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-YPC22	*Pseudoalteromonas* sp. 03-YP014	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-YPC22	*Pseudoalteromonas* sp. 02-YP012	0	0	0.00625	3	0.00	FALSE

Group 1 (M1)	Group 2 (M2)	M1	M2	MSw	N	Tukey's HSD q[a]	Signifcance[b]
Pseudoalteromonas sp. 06-YPC22	*Pseudoalteromonas* sp. 06-YPC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-YPC22	*Pseudoalteromonas* sp. 06-YPC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-YPC22	*Pseudoalteromonas* sp. 09-YP018	0	1.67	0.00625	3	36.51	TRUE
Pseudoalteromonas sp. 06-YPC22	*Pseudoalteromonas* sp. 09-YPC25	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-YPC22	*Pseudoalteromonas* sp. 09-YPC23	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-YPC22	*Pseudoalteromonas* sp. 09-YPO19	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-YPC22	*Pseudoalteromonas* sp. 10B-YPO11	0	3.17	0.00625	3	69.38	TRUE
Pseudoalteromonas sp. 06-YPC22	*Pseudoalteromonas* sp. 09-YPC29	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-YPC22	*Pseudoalteromonas* sp.06-SWC23	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-YPC22	*Pseudoalteromonas* sp. 02-YPC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-YPC22	*Pseudoalteromonas* sp. 11-YP013	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-YPC22	*Pseudoalteromonas* sp. 11-YPC25	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-YPC22	*Pseudoalteromonas* sp. 09-YP001	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-YPC22	*Pseudoalteromonas* sp. 11-YP016	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-YPC22	*Bacillus* sp. 06-YP001	0	4.33	0.00625	3	94.94	TRUE
Pseudoalteromonas sp. 06-YPC22	*Loktanella maritima* 06-YPC210	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-YPC22	*Loktanella maritima* 06-YPC211	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-YPC22	*Cobetia* sp. 10B-YPC21	0	2.17	0.00625	3	47.47	TRUE
Pseudoalteromonas sp. 06-YPC22	*Altermonas* sp. 03-YPC23	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-YPC21	*Pseudoalteromonas* sp.08-SWC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-YPC21	*Pseudoalteromonas* sp. 08-YPC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-YPC21	*Pseudoalteromonas* sp.08-SWC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-YPC21	*Pseudoalteromonas* sp. 03-YP014	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-YPC21	*Pseudoalteromonas* sp. 02-YP012	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-YPC21	*Pseudoalteromonas* sp. 06-YPC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-YPC21	*Pseudoalteromonas* sp. 06-YPC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-YPC21	*Pseudoalteromonas* sp. 09-YP018	0	1.67	0.00625	3	36.51	TRUE
Pseudoalteromonas sp. 06-YPC21	*Pseudoalteromonas* sp. 09-YPC25	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-YPC21	*Pseudoalteromonas* sp. 09-YPC23	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-YPC21	*Pseudoalteromonas* sp. 09-YPO19	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-YPC21	*Pseudoalteromonas* sp. 10B-YPO11	0	3.17	0.00625	3	69.38	TRUE
Pseudoalteromonas sp. 06-YPC21	*Pseudoalteromonas* sp. 09-YPC29	0	0	0.00625	3	0.00	FALSE

Group 1 (M1)	Group 2 (M2)	M1	M2	MSw	N	Tukey's HSD q[a]	Signifcance[b]
Pseudoalteromonas sp. 06-YPC21	*Pseudoalteromonas* sp.06-SWC23	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-YPC21	*Pseudoalteromonas* sp. 02-YPC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-YPC21	*Pseudoalteromonas* sp. 11-YP013	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-YPC21	*Pseudoalteromonas* sp. 11-YPC25	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-YPC21	*Pseudoalteromonas* sp. 09-YP001	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-YPC21	*Pseudoalteromonas* sp. 11-YP016	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-YPC21	*Bacillus* sp. 06-YP001	0	4.33	0.00625	3	94.94	TRUE
Pseudoalteromonas sp. 06-YPC21	*Loktanella maritima* 06-YPC210	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-YPC21	*Loktanella maritima* 06-YPC211	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-YPC21	*Cobetia* sp. 10B-YPC21	0	2.17	0.00625	3	47.47	TRUE
Pseudoalteromonas sp. 06-YPC21	*Altermonas* sp. 03-YPC23	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp.09-YP018	*Pseudoalteromonas* sp.08-SWC22	1.67	0	0.00625	3	36.51	TRUE
Pseudoalteromonas sp.09-YP018	*Pseudoalteromonas* sp. 08-YPC21	1.67	0	0.00625	3	36.51	TRUE
Pseudoalteromonas sp.09-YP018	*Pseudoalteromonas* sp.08-SWC21	1.67	0	0.00625	3	36.51	TRUE
Pseudoalteromonas sp.09-YP018	*Pseudoalteromonas* sp. 03-YP014	1.67	0	0.00625	3	36.51	TRUE
Pseudoalteromonas sp.09-YP018	*Pseudoalteromonas* sp. 02-YP012	1.67	0	0.00625	3	36.51	TRUE
Pseudoalteromonas sp.09-YP018	*Pseudoalteromonas* sp. 06-YPC22	1.67	0	0.00625	3	36.51	TRUE
Pseudoalteromonas sp.09-YP018	*Pseudoalteromonas* sp. 06-YPC21	1.67	0	0.00625	3	36.51	TRUE
Pseudoalteromonas sp.09-YP018	*Pseudoalteromonas* sp. 09-YP018	1.67	1.67	0.00625	3	0.00	FALSE
Pseudoalteromonas sp.09-YP018	*Pseudoalteromonas* sp. 09-YPC25	1.67	0	0.00625	3	36.51	TRUE
Pseudoalteromonas sp.09-YP018	*Pseudoalteromonas* sp. 09-YPC23	1.67	0	0.00625	3	36.51	TRUE
Pseudoalteromonas sp.09-YP018	*Pseudoalteromonas* sp. 09-YPO19	1.67	0	0.00625	3	36.51	TRUE
Pseudoalteromonas sp.09-YP018	*Pseudoalteromonas* sp. 10B-YPO11	1.67	3.17	0.00625	3	32.86	TRUE
Pseudoalteromonas sp.09-YP018	*Pseudoalteromonas* sp. 09-YPC29	1.67	0	0.00625	3	36.51	TRUE
Pseudoalteromonas sp.09-YP018	*Pseudoalteromonas* sp.06-SWC23	1.67	0	0.00625	3	36.51	TRUE
Pseudoalteromonas sp.09-YP018	*Pseudoalteromonas* sp. 02-YPC22	1.67	0	0.00625	3	36.51	TRUE
Pseudoalteromonas sp.09-YP018	*Pseudoalteromonas* sp. 11-YP013	1.67	0	0.00625	3	36.51	TRUE
Pseudoalteromonas sp.09-YP018	*Pseudoalteromonas* sp. 11-YPC25	1.67	0	0.00625	3	36.51	TRUE
Pseudoalteromonas sp.09-YP018	*Pseudoalteromonas* sp. 09-YP001	1.67	0	0.00625	3	36.51	TRUE
Pseudoalteromonas sp.09-YP018	*Pseudoalteromonas* sp. 11-YP016	1.67	0	0.00625	3	36.51	TRUE
Pseudoalteromonas sp.09-YP018	*Bacillus* sp. 06-YP001	1.67	4.33	0.00625	3	58.42	TRUE
Pseudoalteromonas sp.09-YP018	*Loktanella maritima* 06-YPC210	1.67	0	0.00625	3	36.51	TRUE

Group 1 (M1)	Group 2 (M2)	M1	M2	MSw	N	Tukey's HSD q[a]	Signifcance[b]
Pseudoalteromonas sp.09-YP018	*Loktanella maritima* 06-YPC211	1.67	0	0.00625	3	36.51	TRUE
Pseudoalteromonas sp.09-YP018	*Cobetia* sp. 10B-YPC21	1.67	2.17	0.00625	3	10.95	TRUE
Pseudoalteromonas sp.09-YP018	*Altermonas* sp. 03-YPC23	1.67	0	0.00625	3	36.51	TRUE
Pseudoalteromonas sp. 09-YPC25	*Pseudoalteromonas* sp.08-SWC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPC25	*Pseudoalteromonas* sp. 08-YPC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPC25	*Pseudoalteromonas* sp.08-SWC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPC25	*Pseudoalteromonas* sp. 03-YP014	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPC25	*Pseudoalteromonas* sp. 02-YP012	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPC25	*Pseudoalteromonas* sp. 06-YPC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPC25	*Pseudoalteromonas* sp. 06-YPC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPC25	*Pseudoalteromonas* sp. 09-YP018	0	2.17	0.00625	3	47.47	TRUE
Pseudoalteromonas sp. 09-YPC25	*Pseudoalteromonas* sp. 09-YPC25	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPC25	*Pseudoalteromonas* sp. 09-YPC23	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPC25	*Pseudoalteromonas* sp. 09-YPO19	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPC25	*Pseudoalteromonas* sp. 10B-YPO11	0	3.17	0.00625	3	69.38	TRUE
Pseudoalteromonas sp. 09-YPC25	*Pseudoalteromonas* sp. 09-YPC29	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPC25	*Pseudoalteromonas* sp.06-SWC23	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPC25	*Pseudoalteromonas* sp. 02-YPC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPC25	*Pseudoalteromonas* sp. 11-YP013	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPC25	*Pseudoalteromonas* sp. 11-YPC25	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPC25	*Pseudoalteromonas* sp. 09-YP001	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPC25	*Pseudoalteromonas* sp. 11-YP016	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPC25	*Bacillus* sp. 06-YP001	0	4.33	0.00625	3	94.94	TRUE
Pseudoalteromonas sp. 09-YPC25	*Loktanella maritima* 06-YPC210	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPC25	*Loktanella maritima* 06-YPC211	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPC25	*Cobetia* sp. 10B-YPC21	0	2.17	0.00625	3	47.47	TRUE
Pseudoalteromonas sp. 09-YPC25	*Altermonas* sp. 03-YPC23	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPC23	*Pseudoalteromonas* sp.08-SWC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPC23	*Pseudoalteromonas* sp. 08-YPC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPC23	*Pseudoalteromonas* sp.08-SWC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPC23	*Pseudoalteromonas* sp. 03-YP014	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPC23	*Pseudoalteromonas* sp. 02-YP012	0	0	0.00625	3	0.00	FALSE

Group 1 (M1)	Group 2 (M2)	M1	M2	MSw	N	Tukey's HSD q[a]	Signifcance[b]
Pseudoalteromonas sp. 09-YPC23	*Pseudoalteromonas* sp. 06-YPC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPC23	*Pseudoalteromonas* sp. 06-YPC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPC23	*Pseudoalteromonas* sp. 09-YP018	0	1.67	0.00625	3	36.51	TRUE
Pseudoalteromonas sp. 09-YPC23	*Pseudoalteromonas* sp. 09-YPC25	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPC23	*Pseudoalteromonas* sp. 09-YPC23	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPC23	*Pseudoalteromonas* sp. 09-YPO19	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPC23	*Pseudoalteromonas* sp. 10B-YPO11	0	3.17	0.00625	3	69.38	TRUE
Pseudoalteromonas sp. 09-YPC23	*Pseudoalteromonas* sp. 09-YPC29	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPC23	*Pseudoalteromonas* sp.06-SWC23	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPC23	*Pseudoalteromonas* sp. 02-YPC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPC23	*Pseudoalteromonas* sp. 11-YP013	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPC23	*Pseudoalteromonas* sp. 11-YPC25	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPC23	*Pseudoalteromonas* sp. 09-YP001	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPC23	*Pseudoalteromonas* sp. 11-YP016	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPC23	*Bacillus* sp. 06-YP001	0	4.33	0.00625	3	94.94	TRUE
Pseudoalteromonas sp. 09-YPC23	*Loktanella maritima* 06-YPC210	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPC23	*Loktanella maritima* 06-YPC211	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPC23	*Cobetia* sp. 10B-YPC21	0	2.17	0.00625	3	47.47	TRUE
Pseudoalteromonas sp. 09-YPC23	*Altermonas* sp. 03-YPC23	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPO19	*Pseudoalteromonas* sp.08-SWC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPO19	*Pseudoalteromonas* sp. 08-YPC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPO19	*Pseudoalteromonas* sp.08-SWC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPO19	*Pseudoalteromonas* sp. 03-YP014	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPO19	*Pseudoalteromonas* sp. 02-YP012	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPO19	*Pseudoalteromonas* sp. 06-YPC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPO19	*Pseudoalteromonas* sp. 06-YPC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPO19	*Pseudoalteromonas* sp. 09-YP018	0	1.67	0.00625	3	36.51	TRUE
Pseudoalteromonas sp. 09-YPO19	*Pseudoalteromonas* sp. 09-YPC25	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPO19	*Pseudoalteromonas* sp. 09-YPC23	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPO19	*Pseudoalteromonas* sp. 09-YPO19	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPO19	*Pseudoalteromonas* sp. 10B-YPO11	0	3.17	0.00625	3	69.38	TRUE
Pseudoalteromonas sp. 09-YPO19	*Pseudoalteromonas* sp. 09-YPC29	0	0	0.00625	3	0.00	FALSE

Group 1 (M1)	Group 2 (M2)	M1	M2	MSw	N	Tukey's HSD q[a]	Signifcance[b]
Pseudoalteromonas sp. 09-YPO19	*Pseudoalteromonas* sp.06-SWC23	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPO19	*Pseudoalteromonas* sp. 02-YPC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPO19	*Pseudoalteromonas* sp. 11-YP013	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPO19	*Pseudoalteromonas* sp. 11-YPC25	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPO19	*Pseudoalteromonas* sp. 09-YP001	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPO19	*Pseudoalteromonas* sp. 11-YP016	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPO19	*Bacillus* sp. 06-YP001	0	4.33	0.00625	3	94.94	TRUE
Pseudoalteromonas sp. 09-YPO19	*Loktanella maritima* 06-YPC210	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPO19	*Loktanella maritima* 06-YPC211	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPO19	*Cobetia* sp. 10B-YPC21	0	2.17	0.00625	3	47.47	TRUE
Pseudoalteromonas sp. 09-YPO19	*Altermonas* sp. 03-YPC23	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 10B-YPO11	*Pseudoalteromonas* sp.08-SWC22	3.17	0	0.00625	3	69.38	TRUE
Pseudoalteromonas sp. 10B-YPO11	*Pseudoalteromonas* sp. 08-YPC21	3.17	0	0.00625	3	69.38	TRUE
Pseudoalteromonas sp. 10B-YPO11	*Pseudoalteromonas* sp.08-SWC21	3.17	0	0.00625	3	69.38	TRUE
Pseudoalteromonas sp. 10B-YPO11	*Pseudoalteromonas* sp. 03-YP014	3.17	0	0.00625	3	69.38	TRUE
Pseudoalteromonas sp. 10B-YPO11	*Pseudoalteromonas* sp. 02-YP012	3.17	0	0.00625	3	69.38	TRUE
Pseudoalteromonas sp. 10B-YPO11	*Pseudoalteromonas* sp. 06-YPC22	3.17	0	0.00625	3	69.38	TRUE
Pseudoalteromonas sp. 10B-YPO11	*Pseudoalteromonas* sp. 06-YPC21	3.17	0	0.00625	3	69.38	TRUE
Pseudoalteromonas sp. 10B-YPO11	*Pseudoalteromonas* sp. 09-YP018	3.17	1.67	0.00625	3	32.86	TRUE
Pseudoalteromonas sp. 10B-YPO11	*Pseudoalteromonas* sp. 09-YPC25	3.17	0	0.00625	3	69.38	TRUE
Pseudoalteromonas sp. 10B-YPO11	*Pseudoalteromonas* sp. 09-YPC23	3.17	0	0.00625	3	69.38	TRUE
Pseudoalteromonas sp. 10B-YPO11	*Pseudoalteromonas* sp. 09-YPO19	3.17	0	0.00625	3	69.38	TRUE
Pseudoalteromonas sp. 10B-YPO11	*Pseudoalteromonas* sp. 10B-YPO11	3.17	3.17	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 10B-YPO11	*Pseudoalteromonas* sp. 09-YPC29	3.17	0	0.00625	3	69.38	TRUE
Pseudoalteromonas sp. 10B-YPO11	*Pseudoalteromonas* sp.06-SWC23	3.17	0	0.00625	3	69.38	TRUE
Pseudoalteromonas sp. 10B-YPO11	*Pseudoalteromonas* sp. 02-YPC22	3.17	0	0.00625	3	69.38	TRUE
Pseudoalteromonas sp. 10B-YPO11	*Pseudoalteromonas* sp. 11-YP013	3.17	0	0.00625	3	69.38	TRUE
Pseudoalteromonas sp. 10B-YPO11	*Pseudoalteromonas* sp. 11-YPC25	3.17	0	0.00625	3	69.38	TRUE
Pseudoalteromonas sp. 10B-YPO11	*Pseudoalteromonas* sp. 09-YP001	3.17	0	0.00625	3	69.38	TRUE
Pseudoalteromonas sp. 10B-YPO11	*Pseudoalteromonas* sp. 11-YP016	3.17	0	0.00625	3	69.38	TRUE
Pseudoalteromonas sp. 10B-YPO11	*Bacillus* sp. 06-YP001	3.17	4.33	0.00625	3	25.56	TRUE
Pseudoalteromonas sp. 10B-YPO11	*Loktanella maritima* 06-YPC210	3.17	0	0.00625	3	69.38	TRUE

Group 1 (M1)	Group 2 (M2)	M1	M2	MSw	N	Tukey's HSD q[a]	Signifcance[b]
Pseudoalteromonas sp. 10B-YPO11	*Loktanella maritima* 06-YPC211	3.17	0	0.00625	3	69.38	TRUE
Pseudoalteromonas sp. 10B-YPO11	*Cobetia* sp. 10B-YPC21	3.17	2.17	0.00625	3	21.91	TRUE
Pseudoalteromonas sp. 10B-YPO11	*Altermonas* sp. 03-YPC23	3.17	0	0.00625	3	69.38	TRUE
Pseudoalteromonas sp. 09-YPC29	*Pseudoalteromonas* sp.08-SWC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPC29	*Pseudoalteromonas* sp. 08-YPC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPC29	*Pseudoalteromonas* sp.08-SWC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPC29	*Pseudoalteromonas* sp. 03-YP014	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPC29	*Pseudoalteromonas* sp. 02-YP012	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPC29	*Pseudoalteromonas* sp. 06-YPC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPC29	*Pseudoalteromonas* sp. 06-YPC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPC29	*Pseudoalteromonas* sp. 09-YP018	0	1.67	0.00625	3	36.51	TRUE
Pseudoalteromonas sp. 09-YPC29	*Pseudoalteromonas* sp. 09-YPC25	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPC29	*Pseudoalteromonas* sp. 09-YPC23	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPC29	*Pseudoalteromonas* sp. 09-YPO19	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPC29	*Pseudoalteromonas* sp. 10B-YPO11	0	3.17	0.00625	3	69.38	TRUE
Pseudoalteromonas sp. 09-YPC29	*Pseudoalteromonas* sp. 09-YPC29	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPC29	*Pseudoalteromonas* sp.06-SWC23	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPC29	*Pseudoalteromonas* sp. 02-YPC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPC29	*Pseudoalteromonas* sp. 11-YP013	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPC29	*Pseudoalteromonas* sp. 11-YPC25	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPC29	*Pseudoalteromonas* sp. 09-YP001	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPC29	*Pseudoalteromonas* sp. 11-YP016	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPC29	*Bacillus* sp. 06-YP001	0	4.33	0.00625	3	94.94	TRUE
Pseudoalteromonas sp. 09-YPC29	*Loktanella maritima* 06-YPC210	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPC29	*Loktanella maritima* 06-YPC211	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPC29	*Cobetia* sp. 10B-YPC21	0	2.17	0.00625	3	47.47	TRUE
Pseudoalteromonas sp. 09-YPC29	*Altermonas* sp. 03-YPC23	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-SWC23	*Pseudoalteromonas* sp.08-SWC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-SWC23	*Pseudoalteromonas* sp. 08-YPC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-SWC23	*Pseudoalteromonas* sp.08-SWC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-SWC23	*Pseudoalteromonas* sp. 03-YP014	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-SWC23	*Pseudoalteromonas* sp. 02-YP012	0	0	0.00625	3	0.00	FALSE

Group 1 (M1)	Group 2 (M2)	M1	M2	MSw	N	Tukey's HSD q[a]	Signifcance[b]
Pseudoalteromonas sp. 06-SWC23	*Pseudoalteromonas* sp. 06-YPC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-SWC23	*Pseudoalteromonas* sp. 06-YPC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-SWC23	*Pseudoalteromonas* sp. 09-YP018	0	1.67	0.00625	3	36.51	TRUE
Pseudoalteromonas sp. 06-SWC23	*Pseudoalteromonas* sp. 09-YPC25	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-SWC23	*Pseudoalteromonas* sp. 09-YPC23	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-SWC23	*Pseudoalteromonas* sp. 09-YPO19	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-SWC23	*Pseudoalteromonas* sp. 10B-YPO11	0	3.17	0.00625	3	69.38	TRUE
Pseudoalteromonas sp. 06-SWC23	*Pseudoalteromonas* sp. 09-YPC29	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-SWC23	*Pseudoalteromonas* sp.06-SWC23	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-SWC23	*Pseudoalteromonas* sp. 02-YPC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-SWC23	*Pseudoalteromonas* sp. 11-YP013	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-SWC23	*Pseudoalteromonas* sp. 11-YPC25	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-SWC23	*Pseudoalteromonas* sp. 09-YP001	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-SWC23	*Pseudoalteromonas* sp. 11-YP016	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-SWC23	*Bacillus* sp. 06-YP001	0	4.33	0.00625	3	94.94	TRUE
Pseudoalteromonas sp. 06-SWC23	*Loktanella maritima* 06-YPC210	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-SWC23	*Loktanella maritima* 06-YPC211	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 06-SWC23	*Cobetia* sp. 10B-YPC21	0	2.17	0.00625	3	47.47	TRUE
Pseudoalteromonas sp. 06-SWC23	*Altermonas* sp. 03-YPC23	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 02-YPC22	*Pseudoalteromonas* sp.08-SWC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 02-YPC22	*Pseudoalteromonas* sp. 08-YPC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 02-YPC22	*Pseudoalteromonas* sp.08-SWC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 02-YPC22	*Pseudoalteromonas* sp. 03-YP014	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 02-YPC22	*Pseudoalteromonas* sp. 02-YP012	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 02-YPC22	*Pseudoalteromonas* sp. 06-YPC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 02-YPC22	*Pseudoalteromonas* sp. 06-YPC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 02-YPC22	*Pseudoalteromonas* sp. 09-YP018	0	1.67	0.00625	3	36.51	TRUE
Pseudoalteromonas sp. 02-YPC22	*Pseudoalteromonas* sp. 09-YPC25	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 02-YPC22	*Pseudoalteromonas* sp. 09-YPC23	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 02-YPC22	*Pseudoalteromonas* sp. 09-YPO19	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 02-YPC22	*Pseudoalteromonas* sp. 10B-YPO11	0	3.17	0.00625	3	69.38	TRUE
Pseudoalteromonas sp. 02-YPC22	*Pseudoalteromonas* sp. 09-YPC29	0	0	0.00625	3	0.00	FALSE

Group 1 (M1)	Group 2 (M2)	M1	M2	MSw	N	Tukey's HSD q[a]	Signifcance[b]
Pseudoalteromonas sp. 02-YPC22	*Pseudoalteromonas* sp.06-SWC23	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 02-YPC22	*Pseudoalteromonas* sp. 02-YPC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 02-YPC22	*Pseudoalteromonas* sp. 11-YP013	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 02-YPC22	*Pseudoalteromonas* sp. 11-YPC25	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 02-YPC22	*Pseudoalteromonas* sp. 09-YP001	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 02-YPC22	*Pseudoalteromonas* sp. 11-YP016	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 02-YPC22	*Bacillus* sp. 06-YP001	0	4.33	0.00625	3	94.94	TRUE
Pseudoalteromonas sp. 02-YPC22	*Loktanella maritima* 06-YPC210	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 02-YPC22	*Loktanella maritima* 06-YPC211	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 02-YPC22	*Cobetia* sp. 10B-YPC21	0	2.17	0.00625	3	47.47	TRUE
Pseudoalteromonas sp. 02-YPC22	*Altermonas* sp. 03-YPC23	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YP013	*Pseudoalteromonas* sp.08-SWC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YP013	*Pseudoalteromonas* sp. 08-YPC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YP013	*Pseudoalteromonas* sp.08-SWC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YP013	*Pseudoalteromonas* sp. 03-YP014	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YP013	*Pseudoalteromonas* sp. 02-YP012	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YP013	*Pseudoalteromonas* sp. 06-YPC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YP013	*Pseudoalteromonas* sp. 06-YPC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YP013	*Pseudoalteromonas* sp. 09-YP018	0	1.67	0.00625	3	36.51	TRUE
Pseudoalteromonas sp. 11-YP013	*Pseudoalteromonas* sp. 09-YPC25	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YP013	*Pseudoalteromonas* sp. 09-YPC23	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YP013	*Pseudoalteromonas* sp. 09-YPO19	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YP013	*Pseudoalteromonas* sp. 10B-YPO11	0	3.17	0.00625	3	69.38	TRUE
Pseudoalteromonas sp. 11-YP013	*Pseudoalteromonas* sp. 09-YPC29	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YP013	*Pseudoalteromonas* sp.06-SWC23	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YP013	*Pseudoalteromonas* sp. 02-YPC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YP013	*Pseudoalteromonas* sp. 11-YP013	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YP013	*Pseudoalteromonas* sp. 11-YPC25	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YP013	*Pseudoalteromonas* sp. 09-YP001	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YP013	*Pseudoalteromonas* sp. 11-YP016	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YP013	*Bacillus* sp. 06-YP001	0	4.33	0.00625	3	94.94	TRUE
Pseudoalteromonas sp. 11-YP013	*Loktanella maritima* 06-YPC210	0	0	0.00625	3	0.00	FALSE

Group 1 (M1)	Group 2 (M2)	M1	M2	MSw	N	Tukey's HSD q[a]	Signifcance[b]
Pseudoalteromonas sp. 11-YP013	*Loktanella maritima* 06-YPC211	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YP013	*Cobetia* sp. 10B-YPC21	0	2.17	0.00625	3	47.47	TRUE
Pseudoalteromonas sp. 11-YP013	*Altermonas* sp. 03-YPC23	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YPC25	*Pseudoalteromonas* sp.08-SWC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YPC25	*Pseudoalteromonas* sp. 08-YPC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YPC25	*Pseudoalteromonas* sp.08-SWC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YPC25	*Pseudoalteromonas* sp. 03-YP014	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YPC25	*Pseudoalteromonas* sp. 02-YP012	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YPC25	*Pseudoalteromonas* sp. 06-YPC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YPC25	*Pseudoalteromonas* sp. 06-YPC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YPC25	*Pseudoalteromonas* sp. 09-YP018	0	1.67	0.00625	3	36.51	TRUE
Pseudoalteromonas sp. 11-YPC25	*Pseudoalteromonas* sp. 09-YPC25	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YPC25	*Pseudoalteromonas* sp. 09-YPC23	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YPC25	*Pseudoalteromonas* sp. 09-YPO19	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YPC25	*Pseudoalteromonas* sp. 10B-YPO11	0	3.17	0.00625	3	69.38	TRUE
Pseudoalteromonas sp. 11-YPC25	*Pseudoalteromonas* sp. 09-YPC29	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YPC25	*Pseudoalteromonas* sp.06-SWC23	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YPC25	*Pseudoalteromonas* sp. 02-YPC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YPC25	*Pseudoalteromonas* sp. 11-YP013	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YPC25	*Pseudoalteromonas* sp. 11-YPC25	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YPC25	*Pseudoalteromonas* sp. 09-YP001	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YPC25	*Pseudoalteromonas* sp. 11-YP016	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YPC25	*Bacillus* sp. 06-YP001	0	4.33	0.00625	3	94.94	TRUE
Pseudoalteromonas sp. 11-YPC25	*Loktanella maritima* 06-YPC210	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YPC25	*Loktanella maritima* 06-YPC211	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YPC25	*Cobetia* sp. 10B-YPC21	0	2.17	0.00625	3	47.47	TRUE
Pseudoalteromonas sp. 11-YPC25	*Altermonas* sp. 03-YPC23	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YP001	*Pseudoalteromonas* sp.08-SWC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YP001	*Pseudoalteromonas* sp. 08-YPC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YP001	*Pseudoalteromonas* sp.08-SWC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YP001	*Pseudoalteromonas* sp. 03-YP014	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YP001	*Pseudoalteromonas* sp. 02-YP012	0	0	0.00625	3	0.00	FALSE

Group 1 (M1)	Group 2 (M2)	M1	M2	MSw	N	Tukey's HSD q[a]	Signifcance[b]
Pseudoalteromonas sp. 09-YP001	*Pseudoalteromonas* sp. 06-YPC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YP001	*Pseudoalteromonas* sp. 06-YPC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YP001	*Pseudoalteromonas* sp. 09-YP018	0	1.67	0.00625	3	36.51	TRUE
Pseudoalteromonas sp. 09-YP001	*Pseudoalteromonas* sp. 09-YPC25	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YP001	*Pseudoalteromonas* sp. 09-YPC23	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YP001	*Pseudoalteromonas* sp. 09-YPO19	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YP001	*Pseudoalteromonas* sp. 10B-YPO11	0	3.17	0.00625	3	69.38	TRUE
Pseudoalteromonas sp. 09-YP001	*Pseudoalteromonas* sp. 09-YPC29	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YP001	*Pseudoalteromonas* sp.06-SWC23	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YP001	*Pseudoalteromonas* sp. 02-YPC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YP001	*Pseudoalteromonas* sp. 11-YP013	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YP001	*Pseudoalteromonas* sp. 11-YPC25	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YP001	*Pseudoalteromonas* sp. 09-YP001	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YP001	*Pseudoalteromonas* sp. 11-YP016	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YP001	*Bacillus* sp. 06-YP001	0	4.33	0.00625	3	94.94	TRUE
Pseudoalteromonas sp. 09-YP001	*Loktanella maritima* 06-YPC210	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YP001	*Loktanella maritima* 06-YPC211	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 09-YP001	*Cobetia* sp. 10B-YPC21	0	2.17	0.00625	3	47.47	TRUE
Pseudoalteromonas sp. 09-YP001	*Altermonas* sp. 03-YPC23	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YP016	*Pseudoalteromonas* sp.08-SWC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YP016	*Pseudoalteromonas* sp. 08-YPC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YP016	*Pseudoalteromonas* sp.08-SWC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YP016	*Pseudoalteromonas* sp. 03-YP014	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YP016	*Pseudoalteromonas* sp. 02-YP012	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YP016	*Pseudoalteromonas* sp. 06-YPC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YP016	*Pseudoalteromonas* sp. 06-YPC21	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YP016	*Pseudoalteromonas* sp. 09-YP018	0	1.67	0.00625	3	36.51	TRUE
Pseudoalteromonas sp. 11-YP016	*Pseudoalteromonas* sp. 09-YPC25	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YP016	*Pseudoalteromonas* sp. 09-YPC23	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YP016	*Pseudoalteromonas* sp. 09-YPO19	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YP016	*Pseudoalteromonas* sp. 10B-YPO11	0	3.17	0.00625	3	69.38	TRUE
Pseudoalteromonas sp. 11-YP016	*Pseudoalteromonas* sp. 09-YPC29	0	0	0.00625	3	0.00	FALSE

Group 1 (M1)	Group 2 (M2)	M1	M2	MSw	N	Tukey's HSD q[a]	Signifcance[b]
Pseudoalteromonas sp. 11-YP016	*Pseudoalteromonas* sp.06-SWC23	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YP016	*Pseudoalteromonas* sp. 02-YPC22	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YP016	*Pseudoalteromonas* sp. 11-YP013	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YP016	*Pseudoalteromonas* sp. 11-YPC25	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YP016	*Pseudoalteromonas* sp. 09-YP001	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YP016	*Pseudoalteromonas* sp. 11-YP016	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YP016	*Bacillus* sp. 06-YP001	0	4.33	0.00625	3	94.94	TRUE
Pseudoalteromonas sp. 11-YP016	*Loktanella maritima* 06-YPC210	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YP016	*Loktanella maritima* 06-YPC211	0	0	0.00625	3	0.00	FALSE
Pseudoalteromonas sp. 11-YP016	*Cobetia* sp. 10B-YPC21	0	2.17	0.00625	3	47.47	TRUE
Pseudoalteromonas sp. 11-YP016	*Altermonas* sp. 03-YPC23	0	0	0.00625	3	0.00	FALSE
Bacillus sp. 06-YP001	*Pseudoalteromonas* sp.08-SWC22	4.33	0	0.00625	3	94.94	TRUE
Bacillus sp. 06-YP001	*Pseudoalteromonas* sp. 08-YPC21	4.33	0	0.00625	3	94.94	TRUE
Bacillus sp. 06-YP001	*Pseudoalteromonas* sp.08-SWC21	4.33	0	0.00625	3	94.94	TRUE
Bacillus sp. 06-YP001	*Pseudoalteromonas* sp. 03-YP014	4.33	0	0.00625	3	94.94	TRUE
Bacillus sp. 06-YP001	*Pseudoalteromonas* sp. 02-YP012	4.33	0	0.00625	3	94.94	TRUE
Bacillus sp. 06-YP001	*Pseudoalteromonas* sp. 06-YPC22	4.33	0	0.00625	3	94.94	TRUE
Bacillus sp. 06-YP001	*Pseudoalteromonas* sp. 06-YPC21	4.33	0	0.00625	3	94.94	TRUE
Bacillus sp. 06-YP001	*Pseudoalteromonas* sp. 09-YP018	4.33	1.67	0.00625	3	58.42	TRUE
Bacillus sp. 06-YP001	*Pseudoalteromonas* sp. 09-YPC25	4.33	0	0.00625	3	94.94	TRUE
Bacillus sp. 06-YP001	*Pseudoalteromonas* sp. 09-YPC23	4.33	0	0.00625	3	94.94	TRUE
Bacillus sp. 06-YP001	*Pseudoalteromonas* sp. 09-YPO19	4.33	0	0.00625	3	94.94	TRUE
Bacillus sp. 06-YP001	*Pseudoalteromonas* sp. 10B-YPO11	4.33	3.17	0.00625	3	25.56	TRUE
Bacillus sp. 06-YP001	*Pseudoalteromonas* sp. 09-YPC29	4.33	0	0.00625	3	94.94	TRUE
Bacillus sp. 06-YP001	*Pseudoalteromonas* sp.06-SWC23	4.33	0	0.00625	3	94.94	TRUE
Bacillus sp. 06-YP001	*Pseudoalteromonas* sp. 02-YPC22	4.33	0	0.00625	3	94.94	TRUE
Bacillus sp. 06-YP001	*Pseudoalteromonas* sp. 11-YP013	4.33	0	0.00625	3	94.94	TRUE
Bacillus sp. 06-YP001	*Pseudoalteromonas* sp. 11-YPC25	4.33	0	0.00625	3	94.94	TRUE
Bacillus sp. 06-YP001	*Pseudoalteromonas* sp. 09-YP001	4.33	0	0.00625	3	94.94	TRUE
Bacillus sp. 06-YP001	*Pseudoalteromonas* sp. 11-YP016	4.33	0	0.00625	3	94.94	TRUE
Bacillus sp. 06-YP001	*Bacillus* sp. 06-YP001	4.33	4.33	0.00625	3	0.00	FALSE
Bacillus sp. 06-YP001	*Loktanella maritima* 06-YPC210	4.33	0	0.00625	3	94.94	TRUE

Group 1 (M1)	Group 2 (M2)	M1	M2	MSw	N	Tukey's HSD q[a]	Signifcance[b]
Bacillus sp. 06-YP001	*Loktanella maritima* 06-YPC211	4.33	0	0.00625	3	94.94	TRUE
Bacillus sp. 06-YP001	*Cobetia* sp. 10B-YPC21	4.33	2.17	0.00625	3	47.47	TRUE
Bacillus sp. 06-YP001	*Altermonas* sp. 03-YPC23	4.33	0	0.00625	3	94.94	TRUE
Loktanella maritima 06-YPC210	*Pseudoalteromonas* sp.08-SWC22	0	0	0.00625	3	0.00	FALSE
Loktanella maritima 06-YPC210	*Pseudoalteromonas* sp. 08-YPC21	0	0	0.00625	3	0.00	FALSE
Loktanella maritima 06-YPC210	*Pseudoalteromonas* sp.08-SWC21	0	0	0.00625	3	0.00	FALSE
Loktanella maritima 06-YPC210	*Pseudoalteromonas* sp. 03-YP014	0	0	0.00625	3	0.00	FALSE
Loktanella maritima 06-YPC210	*Pseudoalteromonas* sp. 02-YP012	0	0	0.00625	3	0.00	FALSE
Loktanella maritima 06-YPC210	*Pseudoalteromonas* sp. 06-YPC22	0	0	0.00625	3	0.00	FALSE
Loktanella maritima 06-YPC210	*Pseudoalteromonas* sp. 06-YPC21	0	0	0.00625	3	0.00	FALSE
Loktanella maritima 06-YPC210	*Pseudoalteromonas* sp. 09-YP018	0	1.67	0.00625	3	36.51	TRUE
Loktanella maritima 06-YPC210	*Pseudoalteromonas* sp. 09-YPC25	0	0	0.00625	3	0.00	FALSE
Loktanella maritima 06-YPC210	*Pseudoalteromonas* sp. 09-YPC23	0	0	0.00625	3	0.00	FALSE
Loktanella maritima 06-YPC210	*Pseudoalteromonas* sp. 09-YPO19	0	0	0.00625	3	0.00	FALSE
Loktanella maritima 06-YPC210	*Pseudoalteromonas* sp. 10B-YPO11	0	3.17	0.00625	3	69.38	TRUE
Loktanella maritima 06-YPC210	*Pseudoalteromonas* sp. 09-YPC29	0	0	0.00625	3	0.00	FALSE
Loktanella maritima 06-YPC210	*Pseudoalteromonas* sp.06-SWC23	0	0	0.00625	3	0.00	FALSE
Loktanella maritima 06-YPC210	*Pseudoalteromonas* sp. 02-YPC22	0	0	0.00625	3	0.00	FALSE
Loktanella maritima 06-YPC210	*Pseudoalteromonas* sp. 11-YP013	0	0	0.00625	3	0.00	FALSE
Loktanella maritima 06-YPC210	*Pseudoalteromonas* sp. 11-YPC25	0	0	0.00625	3	0.00	FALSE
Loktanella maritima 06-YPC210	*Pseudoalteromonas* sp. 09-YP001	0	0	0.00625	3	0.00	FALSE
Loktanella maritima 06-YPC210	*Pseudoalteromonas* sp. 11-YP016	0	0	0.00625	3	0.00	FALSE
Loktanella maritima 06-YPC210	*Bacillus* sp. 06-YP001	0	4.33	0.00625	3	94.94	TRUE
Loktanella maritima 06-YPC210	*Loktanella maritima* 06-YPC210	0	0	0.00625	3	0.00	FALSE
Loktanella maritima 06-YPC210	*Loktanella maritima* 06-YPC211	0	0	0.00625	3	0.00	FALSE
Loktanella maritima 06-YPC210	*Cobetia* sp. 10B-YPC21	0	2.17	0.00625	3	47.47	TRUE
Loktanella maritima 06-YPC210	*Altermonas* sp. 03-YPC23	0	0	0.00625	3	0.00	FALSE
Loktanella maritima 06-YPC211	*Pseudoalteromonas* sp.08-SWC22	0	0	0.00625	3	0.00	FALSE
Loktanella maritima 06-YPC211	*Pseudoalteromonas* sp. 08-YPC21	0	0	0.00625	3	0.00	FALSE
Loktanella maritima 06-YPC211	*Pseudoalteromonas* sp.08-SWC21	0	0	0.00625	3	0.00	FALSE
Loktanella maritima 06-YPC211	*Pseudoalteromonas* sp. 03-YP014	0	0	0.00625	3	0.00	FALSE
Loktanella maritima 06-YPC211	*Pseudoalteromonas* sp. 02-YP012	0	0	0.00625	3	0.00	FALSE

Group 1 (M1)	Group 2 (M2)	M1	M2	MSw	N	Tukey's HSD q[a]	Signifcance[b]
Loktanella maritima 06-YPC211	*Pseudoalteromonas* sp. 06-YPC22	0	0	0.00625	3	0.00	FALSE
Loktanella maritima 06-YPC211	*Pseudoalteromonas* sp. 06-YPC21	0	0	0.00625	3	0.00	FALSE
Loktanella maritima 06-YPC211	*Pseudoalteromonas* sp. 09-YP018	0	1.67	0.00625	3	36.51	TRUE
Loktanella maritima 06-YPC211	*Pseudoalteromonas* sp. 09-YPC25	0	0	0.00625	3	0.00	FALSE
Loktanella maritima 06-YPC211	*Pseudoalteromonas* sp. 09-YPC23	0	0	0.00625	3	0.00	FALSE
Loktanella maritima 06-YPC211	*Pseudoalteromonas* sp. 09-YPO19	0	0	0.00625	3	0.00	FALSE
Loktanella maritima 06-YPC211	*Pseudoalteromonas* sp. 10B-YPO11	0	3.17	0.00625	3	69.38	TRUE
Loktanella maritima 06-YPC211	*Pseudoalteromonas* sp. 09-YPC29	0	0	0.00625	3	0.00	FALSE
Loktanella maritima 06-YPC211	*Pseudoalteromonas* sp.06-SWC23	0	0	0.00625	3	0.00	FALSE
Loktanella maritima 06-YPC211	*Pseudoalteromonas* sp. 02-YPC22	0	0	0.00625	3	0.00	FALSE
Loktanella maritima 06-YPC211	*Pseudoalteromonas* sp. 11-YP013	0	0	0.00625	3	0.00	FALSE
Loktanella maritima 06-YPC211	*Pseudoalteromonas* sp. 11-YPC25	0	0	0.00625	3	0.00	FALSE
Loktanella maritima 06-YPC211	*Pseudoalteromonas* sp. 09-YP001	0	0	0.00625	3	0.00	FALSE
Loktanella maritima 06-YPC211	*Pseudoalteromonas* sp. 11-YP016	0	0	0.00625	3	0.00	FALSE
Loktanella maritima 06-YPC211	*Bacillus* sp. 06-YP001	0	4.33	0.00625	3	94.94	TRUE
Loktanella maritima 06-YPC211	*Loktanella maritima* 06-YPC210	0	0	0.00625	3	0.00	FALSE
Loktanella maritima 06-YPC211	*Loktanella maritima* 06-YPC211	0	0	0.00625	3	0.00	FALSE
Loktanella maritima 06-YPC211	*Cobetia* sp. 10B-YPC21	0	2.17	0.00625	3	47.47	TRUE
Loktanella maritima 06-YPC211	*Altermonas* sp. 03-YPC23	0	0	0.00625	3	0.00	FALSE
Cobetia sp. 10B-YPC21	*Pseudoalteromonas* sp.08-SWC22	2.17	0	0.00625	3	47.47	TRUE
Cobetia sp. 10B-YPC21	*Pseudoalteromonas* sp. 08-YPC21	2.17	0	0.00625	3	47.47	TRUE
Cobetia sp. 10B-YPC21	*Pseudoalteromonas* sp.08-SWC21	2.17	0	0.00625	3	47.47	TRUE
Cobetia sp. 10B-YPC21	*Pseudoalteromonas* sp. 03-YP014	2.17	0	0.00625	3	47.47	TRUE
Cobetia sp. 10B-YPC21	*Pseudoalteromonas* sp. 02-YP012	2.17	0	0.00625	3	47.47	TRUE
Cobetia sp. 10B-YPC21	*Pseudoalteromonas* sp. 06-YPC22	2.17	0	0.00625	3	47.47	TRUE
Cobetia sp. 10B-YPC21	*Pseudoalteromonas* sp. 06-YPC21	2.17	0	0.00625	3	47.47	TRUE
Cobetia sp. 10B-YPC21	*Pseudoalteromonas* sp. 09-YP018	2.17	1.67	0.00625	3	10.95	TRUE
Cobetia sp. 10B-YPC21	*Pseudoalteromonas* sp. 09-YPC25	2.17	0	0.00625	3	47.47	TRUE
Cobetia sp. 10B-YPC21	*Pseudoalteromonas* sp. 09-YPC23	2.17	0	0.00625	3	47.47	TRUE
Cobetia sp. 10B-YPC21	*Pseudoalteromonas* sp. 09-YPO19	2.17	0	0.00625	3	47.47	TRUE
Cobetia sp. 10B-YPC21	*Pseudoalteromonas* sp. 10B-YPO11	2.17	3.17	0.00625	3	21.91	TRUE
Cobetia sp. 10B-YPC21	*Pseudoalteromonas* sp. 09-YPC29	2.17	0	0.00625	3	47.47	TRUE

Group 1 (M1)	Group 2 (M2)	M1	M2	MSw	N	Tukey's HSD q[a]	Signifcance[b]
Cobetia sp. 10B-YPC21	*Pseudoalteromonas* sp.06-SWC23	2.17	0	0.00625	3	47.47	TRUE
Cobetia sp. 10B-YPC21	*Pseudoalteromonas* sp. 02-YPC22	2.17	0	0.00625	3	47.47	TRUE
Cobetia sp. 10B-YPC21	*Pseudoalteromonas* sp. 11-YP013	2.17	0	0.00625	3	47.47	TRUE
Cobetia sp. 10B-YPC21	*Pseudoalteromonas* sp. 11-YPC25	2.17	0	0.00625	3	47.47	TRUE
Cobetia sp. 10B-YPC21	*Pseudoalteromonas* sp. 09-YP001	2.17	0	0.00625	3	47.47	TRUE
Cobetia sp. 10B-YPC21	*Pseudoalteromonas* sp. 11-YP016	2.17	0	0.00625	3	47.47	TRUE
Cobetia sp. 10B-YPC21	*Bacillus* sp. 06-YP001	2.17	4.33	0.00625	3	47.47	TRUE
Cobetia sp. 10B-YPC21	*Loktanella maritima* 06-YPC210	2.17	0	0.00625	3	47.47	TRUE
Cobetia sp. 10B-YPC21	*Loktanella maritima* 06-YPC211	2.17	0	0.00625	3	47.47	TRUE
Cobetia sp. 10B-YPC21	*Cobetia* sp. 10B-YPC21	2.17	2.17	0.00625	3	0.00	FALSE
Cobetia sp. 10B-YPC21	*Altermonas* sp. 03-YPC23	2.17	0	0.00625	3	47.47	TRUE
Altermonas sp. 03-YPC23	*Pseudoalteromonas* sp.08-SWC22	0	0	0.00625	3	0.00	FALSE
Altermonas sp. 03-YPC23	*Pseudoalteromonas* sp. 08-YPC21	0	0	0.00625	3	0.00	FALSE
Altermonas sp. 03-YPC23	*Pseudoalteromonas* sp.08-SWC21	0	0	0.00625	3	0.00	FALSE
Altermonas sp. 03-YPC23	*Pseudoalteromonas* sp. 03-YP014	0	0	0.00625	3	0.00	FALSE
Altermonas sp. 03-YPC23	*Pseudoalteromonas* sp. 02-YP012	0	0	0.00625	3	0.00	FALSE
Altermonas sp. 03-YPC23	*Pseudoalteromonas* sp. 06-YPC22	0	0	0.00625	3	0.00	FALSE
Altermonas sp. 03-YPC23	*Pseudoalteromonas* sp. 06-YPC21	0	0	0.00625	3	0.00	FALSE
Altermonas sp. 03-YPC23	*Pseudoalteromonas* sp. 09-YP018	0	1.67	0.00625	3	36.51	TRUE
Altermonas sp. 03-YPC23	*Pseudoalteromonas* sp. 09-YPC25	0	0	0.00625	3	0.00	FALSE
Altermonas sp. 03-YPC23	*Pseudoalteromonas* sp. 09-YPC23	0	0	0.00625	3	0.00	FALSE
Altermonas sp. 03-YPC23	*Pseudoalteromonas* sp. 09-YPO19	0	0	0.00625	3	0.00	FALSE
Altermonas sp. 03-YPC23	*Pseudoalteromonas* sp. 10B-YPO11	0	3.17	0.00625	3	69.38	TRUE
Altermonas sp. 03-YPC23	*Pseudoalteromonas* sp. 09-YPC29	0	0	0.00625	3	0.00	FALSE
Altermonas sp. 03-YPC23	*Pseudoalteromonas* sp.06-SWC23	0	0	0.00625	3	0.00	FALSE
Altermonas sp. 03-YPC23	*Pseudoalteromonas* sp. 02-YPC22	0	0	0.00625	3	0.00	FALSE
Altermonas sp. 03-YPC23	*Pseudoalteromonas* sp. 11-YP013	0	0	0.00625	3	0.00	FALSE
Altermonas sp. 03-YPC23	*Pseudoalteromonas* sp. 11-YPC25	0	0	0.00625	3	0.00	FALSE
Altermonas sp. 03-YPC23	*Pseudoalteromonas* sp. 09-YP001	0	0	0.00625	3	0.00	FALSE
Altermonas sp. 03-YPC23	*Pseudoalteromonas* sp. 11-YP016	0	0	0.00625	3	0.00	FALSE
Altermonas sp. 03-YPC23	*Bacillus* sp. 06-YP001	0	4.33	0.00625	3	94.94	TRUE
Altermonas sp. 03-YPC23	*Loktanella maritima* 06-YPC210	0	0	0.00625	3	0.00	FALSE

Group 1 (M1)	Group 2 (M2)	M1	M2	MSw	N	Tukey's HSD q[a]	Signifcance[b]
Altermonas sp. 03-YPC23	*Loktanella maritima* 06-YPC211	0	0	0.00625	3	0.00	FALSE
Altermonas sp. 03-YPC23	*Cobetia* sp. 10B-YPC21	0	2.17	0.00625	3	47.47	TRUE
Altermonas sp. 03-YPC23	*Altermonas* sp. 03-YPC23	0	0	0.00625	3	0.00	FALSE

[a] Tukey 's HSD q= (M1- M2)/√(MSw x (1/n))

[b] True= Tukey 's HSD q>3.53 (blue highlight), False= Tukey 's HSD q<3.53

[c] Green highlight is comparison of self to self

Appendix 6. Tuckey Honest Significant Difference Test between ZOI (mm) against *Thalassobius* sp. I31.1

Group 1 (M1)	Group 2 (M2)	M1	M2	MSw	N	Tukey's HSD q[a]	Signifcance[b]
Pseudoalteromonas sp. 08-SWC22	*Pseudoalteromonas* sp. 08-SWC22[c]	1	1	0.065	3	0.00	FALSE
Pseudoalteromonas sp. 08-SWC22	*Pseudoalteromonas* sp. 08-YPC21	1	1.17	0.065	3	1.13	FALSE
Pseudoalteromonas sp. 08-SWC22	*Pseudoalteromonas* sp. 08-SWC21	1	1.17	0.065	3	1.13	FALSE
Pseudoalteromonas sp. 08-SWC22	*Pseudoalteromonas* sp.03-YP014	1	2.5	0.065	3	10.16	TRUE
Pseudoalteromonas sp. 08-SWC22	*Pseudoalteromonas* sp. 02-YP012	1	2	0.065	3	6.77	TRUE
Pseudoalteromonas sp. 08-SWC22	*Pseudoalteromonas* sp. 06-YPC22	1	1.83	0.065	3	5.64	TRUE
Pseudoalteromonas sp. 08-SWC22	*Pseudoalteromonas* sp. 06-YPC21	1	1.67	0.065	3	4.51	TRUE
Pseudoalteromonas sp. 08-SWC22	*Pseudoalteromonas* sp.09-YP018	1	0	0.065	3	6.77	TRUE
Pseudoalteromonas sp. 08-SWC22	*Pseudoalteromonas* sp. 09-YPC25	1	0	0.065	3	6.77	TRUE
Pseudoalteromonas sp. 08-SWC22	*Pseudoalteromonas* sp. 09-YPC23	1	0	0.065	3	6.77	TRUE
Pseudoalteromonas sp. 08-SWC22	*Pseudoalteromonas* sp. 09-YPO19	1	0.57	0.065	3	2.93	FALSE
Pseudoalteromonas sp. 08-SWC22	*Pseudoalteromonas* sp. 10B-YPO11	1	1.67	0.065	3	4.51	TRUE
Pseudoalteromonas sp. 08-SWC22	*Pseudoalteromonas* sp. 09-YPC29	1	0	0.065	3	6.77	TRUE
Pseudoalteromonas sp. 08-SWC22	*Pseudoalteromonas* sp. 06-SWC23	1	0.5	0.065	3	3.39	FALSE
Pseudoalteromonas sp. 08-SWC22	*Pseudoalteromonas* sp. 02-YPC22	1	1.97	0.065	3	6.55	TRUE
Pseudoalteromonas sp. 08-SWC22	*Pseudoalteromonas* sp. 11-YP013	1	0.5	0.065	3	3.39	FALSE
Pseudoalteromonas sp. 08-SWC22	*Pseudoalteromonas* sp. 11-YPC25	1	0.63	0.065	3	2.48	FALSE
Pseudoalteromonas sp. 08-SWC22	*Pseudoalteromonas* sp. 09-YP001	1	4.33	0.065	3	22.57	TRUE
Pseudoalteromonas sp. 08-SWC22	*Pseudoalteromonas* sp. 11-YP016	1	2.17	0.065	3	7.90	TRUE
Pseudoalteromonas sp. 08-SWC22	*Bacillus* sp. 06-YP001	1	2	0.065	3	6.77	TRUE
Pseudoalteromonas sp. 08-SWC22	*Loktanella maritima* 06-YPC210	1	2	0.065	3	6.77	TRUE
Pseudoalteromonas sp. 08-SWC22	*Loktanella maritima* 06-YPC211	1	1.67	0.065	3	4.51	TRUE
Pseudoalteromonas sp. 08-SWC22	*Cobetia* sp. 10B-YPC21	1	0	0.065	3	6.77	TRUE
Pseudoalteromonas sp. 08-SWC22	*Altermonas* sp. 03-YPC23	1	1.83	0.065	3	5.64	TRUE
Pseudoalteromonas sp. 08-YPC21	*Pseudoalteromonas* sp. 08-SWC22	1.17	1	0.065	3	1.13	FALSE
Pseudoalteromonas sp. 08-YPC21	*Pseudoalteromonas* sp. 08-YPC21	1.17	1.17	0.065	3	0.00	FALSE
Pseudoalteromonas sp. 08-YPC21	*Pseudoalteromonas* sp. 08-SWC21	1.17	1.17	0.065	3	0.00	FALSE
Pseudoalteromonas sp. 08-YPC21	*Pseudoalteromonas* sp.03-YP014	1.17	2.5	0.065	3	9.03	TRUE
Pseudoalteromonas sp. 08-YPC21	*Pseudoalteromonas* sp. 02-YP012	1.17	2	0.065	3	5.64	TRUE

Group 1 (M1)	Group 2 (M2)	M1	M2	MSw	N	Tukey's HSD q[a]	Signifcance[b]
Pseudoalteromonas sp. 08-YPC21	*Pseudoalteromonas* sp. 06-YPC22	1.17	1.83	0.065	3	4.51	TRUE
Pseudoalteromonas sp. 08-YPC21	*Pseudoalteromonas* sp. 06-YPC21	1.17	1.67	0.065	3	3.39	FALSE
Pseudoalteromonas sp. 08-YPC21	*Pseudoalteromonas* sp. 09-YP018	1.17	0	0.065	3	7.90	TRUE
Pseudoalteromonas sp. 08-YPC21	*Pseudoalteromonas* sp. 09-YPC25	1.17	0	0.065	3	7.90	TRUE
Pseudoalteromonas sp. 08-YPC21	*Pseudoalteromonas* sp. 09-YPC23	1.17	0	0.065	3	7.90	TRUE
Pseudoalteromonas sp. 08-YPC21	*Pseudoalteromonas* sp. 09-YPO19	1.17	0.57	0.065	3	4.06	TRUE
Pseudoalteromonas sp. 08-YPC21	*Pseudoalteromonas* sp. 10B-YPO11	1.17	1.67	0.065	3	3.39	FALSE
Pseudoalteromonas sp. 08-YPC21	*Pseudoalteromonas* sp. 09-YPC29	1.17	0	0.065	3	7.90	TRUE
Pseudoalteromonas sp. 08-YPC21	*Pseudoalteromonas* sp. 06-SWC23	1.17	0.5	0.065	3	4.51	TRUE
Pseudoalteromonas sp. 08-YPC21	*Pseudoalteromonas* sp. 02-YPC22	1.17	1.97	0.065	3	5.42	TRUE
Pseudoalteromonas sp. 08-YPC21	*Pseudoalteromonas* sp. 11-YP013	1.17	0.5	0.065	3	4.51	TRUE
Pseudoalteromonas sp. 08-YPC21	*Pseudoalteromonas* sp. 11-YPC25	1.17	0.63	0.065	3	3.61	TRUE
Pseudoalteromonas sp. 08-YPC21	*Pseudoalteromonas* sp. 09-YP001	1.17	4.33	0.065	3	21.44	TRUE
Pseudoalteromonas sp. 08-YPC21	*Pseudoalteromonas* sp. 11-YP016	1.17	2.17	0.065	3	6.77	TRUE
Pseudoalteromonas sp. 08-YPC21	*Bacillus* sp. 06-YP001	1.17	2	0.065	3	5.64	TRUE
Pseudoalteromonas sp. 08-YPC21	*Loktanella maritima* 06-YPC210	1.17	2	0.065	3	5.64	TRUE
Pseudoalteromonas sp. 08-YPC21	*Loktanella maritima* 06-YPC211	1.17	1.67	0.065	3	3.39	FALSE
Pseudoalteromonas sp. 08-YPC21	*Cobetia* sp. 10B-YPC21	1.17	0	0.065	3	7.90	TRUE
Pseudoalteromonas sp. 08-YPC21	*Altermonas* sp. 03-YPC23	1.17	1.83	0.065	3	4.51	TRUE
Pseudoalteromonas sp. 08-SWC21	*Pseudoalteromonas* sp. 08-SWC22	1.17	1	0.065	3	1.13	FALSE
Pseudoalteromonas sp. 08-SWC21	*Pseudoalteromonas* sp. 08-YPC21	1.17	1.17	0.065	3	0.00	FALSE
Pseudoalteromonas sp. 08-SWC21	*Pseudoalteromonas* sp. 08-SWC21	1.17	1.17	0.065	3	0.00	FALSE
Pseudoalteromonas sp. 08-SWC21	*Pseudoalteromonas* sp.03-YP014	1.17	2.5	0.065	3	9.03	TRUE
Pseudoalteromonas sp. 08-SWC21	*Pseudoalteromonas* sp. 02-YP012	1.17	2	0.065	3	5.64	TRUE
Pseudoalteromonas sp. 08-SWC21	*Pseudoalteromonas* sp. 06-YPC22	1.17	1.83	0.065	3	4.51	TRUE
Pseudoalteromonas sp. 08-SWC21	*Pseudoalteromonas* sp. 06-YPC21	1.17	1.67	0.065	3	3.39	FALSE
Pseudoalteromonas sp. 08-SWC21	*Pseudoalteromonas* sp. 09-YP018	1.17	0	0.065	3	7.90	TRUE
Pseudoalteromonas sp. 08-SWC21	*Pseudoalteromonas* sp. 09-YPC25	1.17	0	0.065	3	7.90	TRUE
Pseudoalteromonas sp. 08-SWC21	*Pseudoalteromonas* sp. 09-YPC23	1.17	0	0.065	3	7.90	TRUE
Pseudoalteromonas sp. 08-SWC21	*Pseudoalteromonas* sp. 09-YPO19	1.17	0.57	0.065	3	4.06	TRUE
Pseudoalteromonas sp. 08-SWC21	*Pseudoalteromonas* sp. 10B-YPO11	1.17	1.67	0.065	3	3.39	FALSE
Pseudoalteromonas sp. 08-SWC21	*Pseudoalteromonas* sp. 09-YPC29	1.17	0	0.065	3	7.90	TRUE

Group 1 (M1)	Group 2 (M2)	M1	M2	MSw	N	Tukey's HSD q[a]	Signifcance[b]
Pseudoalteromonas sp. 08-SWC21	*Pseudoalteromonas* sp. 06-SWC23	1.17	0.5	0.065	3	4.51	TRUE
Pseudoalteromonas sp. 08-SWC21	*Pseudoalteromonas* sp. 02-YPC22	1.17	1.97	0.065	3	5.42	TRUE
Pseudoalteromonas sp. 08-SWC21	*Pseudoalteromonas* sp. 11-YP013	1.17	0.5	0.065	3	4.51	TRUE
Pseudoalteromonas sp. 08-SWC21	*Pseudoalteromonas* sp. 11-YPC25	1.17	0.63	0.065	3	3.61	TRUE
Pseudoalteromonas sp. 08-SWC21	*Pseudoalteromonas* sp. 09-YP001	1.17	4.33	0.065	3	21.44	TRUE
Pseudoalteromonas sp. 08-SWC21	*Pseudoalteromonas* sp. 11-YP016	1.17	2.17	0.065	3	6.77	TRUE
Pseudoalteromonas sp. 08-SWC21	*Bacillus* sp. 06-YP001	1.17	2	0.065	3	5.64	TRUE
Pseudoalteromonas sp. 08-SWC21	*Loktanella maritima* 06-YPC210	1.17	2	0.065	3	5.64	TRUE
Pseudoalteromonas sp. 08-SWC21	*Loktanella maritima* 06-YPC211	1.17	1.67	0.065	3	3.39	FALSE
Pseudoalteromonas sp. 08-SWC21	*Cobetia* sp. 10B-YPC21	1.17	0	0.065	3	7.90	TRUE
Pseudoalteromonas sp. 08-SWC21	*Altermonas* sp. 03-YPC23	1.17	1.83	0.065	3	4.51	TRUE
Pseudoalteromonas sp. 03-YP014	*Pseudoalteromonas* sp. 08-SWC22	2.5	1	0.065	3	10.16	TRUE
Pseudoalteromonas sp. 03-YP014	*Pseudoalteromonas* sp. 08-YPC21	2.5	1.17	0.065	3	9.03	TRUE
Pseudoalteromonas sp. 03-YP014	*Pseudoalteromonas* sp. 08-SWC21	2.5	1.17	0.065	3	9.03	TRUE
Pseudoalteromonas sp. 03-YP014	*Pseudoalteromonas* sp.03-YP014	2.5	2.5	0.065	3	0.00	FALSE
Pseudoalteromonas sp. 03-YP014	*Pseudoalteromonas* sp. 02-YP012	2.5	2	0.065	3	3.39	FALSE
Pseudoalteromonas sp. 03-YP014	*Pseudoalteromonas* sp. 06-YPC22	2.5	1.83	0.065	3	4.51	TRUE
Pseudoalteromonas sp. 03-YP014	*Pseudoalteromonas* sp. 06-YPC21	2.5	1.67	0.065	3	5.64	TRUE
Pseudoalteromonas sp. 03-YP014	*Pseudoalteromonas* sp. 09-YP018	2.5	0	0.065	3	16.93	TRUE
Pseudoalteromonas sp. 03-YP014	*Pseudoalteromonas* sp. 09-YPC25	2.5	0	0.065	3	16.93	TRUE
Pseudoalteromonas sp. 03-YP014	*Pseudoalteromonas* sp. 09-YPC23	2.5	0	0.065	3	16.93	TRUE
Pseudoalteromonas sp. 03-YP014	*Pseudoalteromonas* sp. 09-YPO19	2.5	0.57	0.065	3	13.09	TRUE
Pseudoalteromonas sp. 03-YP014	*Pseudoalteromonas* sp. 10B-YPO11	2.5	1.67	0.065	3	5.64	TRUE
Pseudoalteromonas sp. 03-YP014	*Pseudoalteromonas* sp. 09-YPC29	2.5	0	0.065	3	16.93	TRUE
Pseudoalteromonas sp. 03-YP014	*Pseudoalteromonas* sp. 06-SWC23	2.5	0.5	0.065	3	13.54	TRUE
Pseudoalteromonas sp. 03-YP014	*Pseudoalteromonas* sp. 02-YPC22	2.5	1.97	0.065	3	3.61	TRUE
Pseudoalteromonas sp. 03-YP014	*Pseudoalteromonas* sp. 11-YP013	2.5	0.5	0.065	3	13.54	TRUE
Pseudoalteromonas sp. 03-YP014	*Pseudoalteromonas* sp. 11-YPC25	2.5	0.63	0.065	3	12.64	TRUE
Pseudoalteromonas sp. 03-YP014	*Pseudoalteromonas* sp. 09-YP001	2.5	4.33	0.065	3	12.42	TRUE
Pseudoalteromonas sp. 03-YP014	*Pseudoalteromonas* sp. 11-YP016	2.5	2.17	0.065	3	2.26	FALSE
Pseudoalteromonas sp. 03-YP014	*Bacillus* sp. 06-YP001	2.5	2	0.065	3	3.39	FALSE
Pseudoalteromonas sp. 03-YP014	*Loktanella maritima* 06-YPC210	2.5	2	0.065	3	3.39	FALSE

Group 1 (M1)	Group 2 (M2)	M1	M2	MSw	N	Tukey's HSD q[a]	Signifcance[b]
Pseudoalteromonas sp. 03-YP014	*Loktanella maritima* 06-YPC211	2.5	1.67	0.065	3	5.64	TRUE
Pseudoalteromonas sp. 03-YP014	*Cobetia* sp. 10B-YPC21	2.5	0	0.065	3	16.93	TRUE
Pseudoalteromonas sp. 03-YP014	*Altermonas* sp. 03-YPC23	2.5	1.83	0.065	3	4.51	TRUE
Pseudoalteromonas sp. 02-YP012	*Pseudoalteromonas* sp. 08-SWC22	2	1	0.065	3	6.77	TRUE
Pseudoalteromonas sp. 02-YP012	*Pseudoalteromonas* sp. 08-YPC21	2	1.17	0.065	3	5.64	TRUE
Pseudoalteromonas sp. 02-YP012	*Pseudoalteromonas* sp. 08-SWC21	2	1.17	0.065	3	5.64	TRUE
Pseudoalteromonas sp. 02-YP012	*Pseudoalteromonas* sp.03-YP014	2	2.5	0.065	3	3.39	FALSE
Pseudoalteromonas sp. 02-YP012	*Pseudoalteromonas* sp. 02-YP012	2	2	0.065	3	0.00	FALSE
Pseudoalteromonas sp. 02-YP012	*Pseudoalteromonas* sp. 06-YPC22	2	1.83	0.065	3	1.13	FALSE
Pseudoalteromonas sp. 02-YP012	*Pseudoalteromonas* sp. 06-YPC21	2	1.67	0.065	3	2.26	FALSE
Pseudoalteromonas sp. 02-YP012	*Pseudoalteromonas* sp. 09-YP018	2	0	0.065	3	13.54	TRUE
Pseudoalteromonas sp. 02-YP012	*Pseudoalteromonas* sp. 09-YPC25	2	0	0.065	3	13.54	TRUE
Pseudoalteromonas sp. 02-YP012	*Pseudoalteromonas* sp. 09-YPC23	2	0	0.065	3	13.54	TRUE
Pseudoalteromonas sp. 02-YP012	*Pseudoalteromonas* sp. 09-YPO19	2	0.57	0.065	3	9.71	TRUE
Pseudoalteromonas sp. 02-YP012	*Pseudoalteromonas* sp. 10B-YPO11	2	1.67	0.065	3	2.26	FALSE
Pseudoalteromonas sp. 02-YP012	*Pseudoalteromonas* sp. 09-YPC29	2	0	0.065	3	13.54	TRUE
Pseudoalteromonas sp. 02-YP012	*Pseudoalteromonas* sp. 06-SWC23	2	0.5	0.065	3	10.16	TRUE
Pseudoalteromonas sp. 02-YP012	*Pseudoalteromonas* sp. 02-YPC22	2	1.97	0.065	3	0.23	FALSE
Pseudoalteromonas sp. 02-YP012	*Pseudoalteromonas* sp. 11-YP013	2	0.5	0.065	3	10.16	TRUE
Pseudoalteromonas sp. 02-YP012	*Pseudoalteromonas* sp. 11-YPC25	2	0.63	0.065	3	9.26	TRUE
Pseudoalteromonas sp. 02-YP012	*Pseudoalteromonas* sp. 09-YP001	2	4.33	0.065	3	15.80	TRUE
Pseudoalteromonas sp. 02-YP012	*Pseudoalteromonas* sp. 11-YP016	2	2.17	0.065	3	1.13	FALSE
Pseudoalteromonas sp. 02-YP012	*Bacillus* sp. 06-YP001	2	2	0.065	3	0.00	FALSE
Pseudoalteromonas sp. 02-YP012	*Loktanella maritima* 06-YPC210	2	2	0.065	3	0.00	FALSE
Pseudoalteromonas sp. 02-YP012	*Loktanella maritima* 06-YPC211	2	1.67	0.065	3	2.26	FALSE
Pseudoalteromonas sp. 02-YP012	*Cobetia* sp. 10B-YPC21	2	0	0.065	3	13.54	TRUE
Pseudoalteromonas sp. 02-YP012	*Altermonas* sp. 03-YPC23	2	1.83	0.065	3	1.13	FALSE
Pseudoalteromonas sp. 06-YPC22	*Pseudoalteromonas* sp. 08-SWC22	1.83	1	0.065	3	5.64	TRUE
Pseudoalteromonas sp. 06-YPC22	*Pseudoalteromonas* sp. 08-YPC21	1.83	1.17	0.065	3	4.51	TRUE
Pseudoalteromonas sp. 06-YPC22	*Pseudoalteromonas* sp. 08-SWC21	1.83	1.17	0.065	3	4.51	TRUE
Pseudoalteromonas sp. 06-YPC22	*Pseudoalteromonas* sp.03-YP014	1.83	2.5	0.065	3	4.51	TRUE
Pseudoalteromonas sp. 06-YPC22	*Pseudoalteromonas* sp. 02-YP012	1.83	2	0.065	3	1.13	FALSE

Group 1 (M1)	Group 2 (M2)	M1	M2	MSw	N	Tukey's HSD q[a]	Signifcance[b]
Pseudoalteromonas sp. 06-YPC22	*Pseudoalteromonas* sp. 06-YPC22	1.83	1.83	0.065	3	0.00	FALSE
Pseudoalteromonas sp. 06-YPC22	*Pseudoalteromonas* sp. 06-YPC21	1.83	1.67	0.065	3	1.13	FALSE
Pseudoalteromonas sp. 06-YPC22	*Pseudoalteromonas* sp. 09-YP018	1.83	0	0.065	3	12.42	TRUE
Pseudoalteromonas sp. 06-YPC22	*Pseudoalteromonas* sp. 09-YPC25	1.83	0	0.065	3	12.42	TRUE
Pseudoalteromonas sp. 06-YPC22	*Pseudoalteromonas* sp. 09-YPC23	1.83	0	0.065	3	12.42	TRUE
Pseudoalteromonas sp. 06-YPC22	*Pseudoalteromonas* sp. 09-YPO19	1.83	0.57	0.065	3	8.58	TRUE
Pseudoalteromonas sp. 06-YPC22	*Pseudoalteromonas* sp. 10B-YPO11	1.83	1.67	0.065	3	1.13	FALSE
Pseudoalteromonas sp. 06-YPC22	*Pseudoalteromonas* sp. 09-YPC29	1.83	0	0.065	3	12.42	TRUE
Pseudoalteromonas sp. 06-YPC22	*Pseudoalteromonas* sp. 06-SWC23	1.83	0.5	0.065	3	9.03	TRUE
Pseudoalteromonas sp. 06-YPC22	*Pseudoalteromonas* sp. 02-YPC22	1.83	1.97	0.065	3	0.90	FALSE
Pseudoalteromonas sp. 06-YPC22	*Pseudoalteromonas* sp. 11-YP013	1.83	0.5	0.065	3	9.03	TRUE
Pseudoalteromonas sp. 06-YPC22	*Pseudoalteromonas* sp. 11-YPC25	1.83	0.63	0.065	3	8.13	TRUE
Pseudoalteromonas sp. 06-YPC22	*Pseudoalteromonas* sp. 09-YP001	1.83	4.33	0.065	3	16.93	TRUE
Pseudoalteromonas sp. 06-YPC22	*Pseudoalteromonas* sp. 11-YP016	1.83	2.17	0.065	3	2.26	FALSE
Pseudoalteromonas sp. 06-YPC22	*Bacillus* sp. 06-YP001	1.83	2	0.065	3	1.13	FALSE
Pseudoalteromonas sp. 06-YPC22	*Loktanella maritima* 06-YPC210	1.83	2	0.065	3	1.13	FALSE
Pseudoalteromonas sp. 06-YPC22	*Loktanella maritima* 06-YPC211	1.83	1.67	0.065	3	1.13	FALSE
Pseudoalteromonas sp. 06-YPC22	*Cobetia* sp. 10B-YPC21	1.83	0	0.065	3	12.42	TRUE
Pseudoalteromonas sp. 06-YPC22	*Altermonas* sp. 03-YPC23	1.83	1.83	0.065	3	0.00	FALSE
Pseudoalteromonas sp.06-YPC21	*Pseudoalteromonas* sp. 08-SWC22	1.67	1	0.065	3	4.51	TRUE
Pseudoalteromonas sp.06-YPC21	*Pseudoalteromonas* sp. 08-YPC21	1.67	1.17	0.065	3	3.39	FALSE
Pseudoalteromonas sp.06-YPC21	*Pseudoalteromonas* sp. 08-SWC21	1.67	1.17	0.065	3	3.39	FALSE
Pseudoalteromonas sp.06-YPC21	*Pseudoalteromonas* sp.03-YP014	1.67	2.5	0.065	3	5.64	TRUE
Pseudoalteromonas sp.06-YPC21	*Pseudoalteromonas* sp. 02-YP012	1.67	2	0.065	3	2.26	FALSE
Pseudoalteromonas sp.06-YPC21	*Pseudoalteromonas* sp. 06-YPC22	1.67	1.83	0.065	3	1.13	FALSE
Pseudoalteromonas sp.06-YPC21	*Pseudoalteromonas* sp. 06-YPC21	1.67	1.67	0.065	3	0.00	FALSE
Pseudoalteromonas sp.06-YPC21	*Pseudoalteromonas* sp. 09-YP018	1.67	0	0.065	3	11.29	TRUE
Pseudoalteromonas sp.06-YPC21	*Pseudoalteromonas* sp. 09-YPC25	1.67	0	0.065	3	11.29	TRUE
Pseudoalteromonas sp.06-YPC21	*Pseudoalteromonas* sp. 09-YPC23	1.67	0	0.065	3	11.29	TRUE
Pseudoalteromonas sp.06-YPC21	*Pseudoalteromonas* sp. 09-YPO19	1.67	0.57	0.065	3	7.45	TRUE
Pseudoalteromonas sp.06-YPC21	*Pseudoalteromonas* sp. 10B-YPO11	1.67	1.67	0.065	3	0.00	FALSE
Pseudoalteromonas sp.06-YPC21	*Pseudoalteromonas* sp. 09-YPC29	1.67	0	0.065	3	11.29	TRUE

Group 1 (M1)	Group 2 (M2)	M1	M2	MSw	N	Tukey's HSD q[a]	Signifcance[b]
Pseudoalteromonas sp.06-YPC21	*Pseudoalteromonas* sp. 06-SWC23	1.67	0.5	0.065	3	7.90	TRUE
Pseudoalteromonas sp.06-YPC21	*Pseudoalteromonas* sp. 02-YPC22	1.67	1.97	0.065	3	2.03	FALSE
Pseudoalteromonas sp.06-YPC21	*Pseudoalteromonas* sp. 11-YP013	1.67	0.5	0.065	3	7.90	TRUE
Pseudoalteromonas sp.06-YPC21	*Pseudoalteromonas* sp. 11-YPC25	1.67	0.63	0.065	3	7.00	TRUE
Pseudoalteromonas sp.06-YPC21	*Pseudoalteromonas* sp. 09-YP001	1.67	4.33	0.065	3	18.06	TRUE
Pseudoalteromonas sp.06-YPC21	*Pseudoalteromonas* sp. 11-YP016	1.67	2.17	0.065	3	3.39	FALSE
Pseudoalteromonas sp.06-YPC21	*Bacillus* sp. 06-YP001	1.67	2	0.065	3	2.26	FALSE
Pseudoalteromonas sp.06-YPC21	*Loktanella maritima* 06-YPC210	1.67	2	0.065	3	2.26	FALSE
Pseudoalteromonas sp.06-YPC21	*Loktanella maritima* 06-YPC211	1.67	1.67	0.065	3	0.00	FALSE
Pseudoalteromonas sp.06-YPC21	*Cobetia* sp. 10B-YPC21	1.67	0	0.065	3	11.29	TRUE
Pseudoalteromonas sp.06-YPC21	*Altermonas* sp. 03-YPC23	1.67	1.83	0.065	3	1.13	FALSE
Pseudoalteromonas sp. 09-YP018	*Pseudoalteromonas* sp. 08-SWC22	0	1	0.065	3	6.77	TRUE
Pseudoalteromonas sp. 09-YP018	*Pseudoalteromonas* sp. 08-YPC21	0	1.17	0.065	3	7.90	TRUE
Pseudoalteromonas sp. 09-YP018	*Pseudoalteromonas* sp. 08-SWC21	0	1.17	0.065	3	7.90	TRUE
Pseudoalteromonas sp. 09-YP018	*Pseudoalteromonas* sp.03-YP014	0	2.5	0.065	3	16.93	TRUE
Pseudoalteromonas sp. 09-YP018	*Pseudoalteromonas* sp. 02-YP012	0	2	0.065	3	13.54	TRUE
Pseudoalteromonas sp. 09-YP018	*Pseudoalteromonas* sp. 06-YPC22	0	1.83	0.065	3	12.42	TRUE
Pseudoalteromonas sp. 09-YP018	*Pseudoalteromonas* sp. 06-YPC21	0	1.67	0.065	3	11.29	TRUE
Pseudoalteromonas sp. 09-YP018	*Pseudoalteromonas* sp. 09-YP018	0	0	0.065	3	0.00	FALSE
Pseudoalteromonas sp. 09-YP018	*Pseudoalteromonas* sp. 09-YPC25	0	0	0.065	3	0.00	FALSE
Pseudoalteromonas sp. 09-YP018	*Pseudoalteromonas* sp. 09-YPC23	0	0	0.065	3	0.00	FALSE
Pseudoalteromonas sp. 09-YP018	*Pseudoalteromonas* sp. 09-YPO19	0	0.57	0.065	3	3.84	TRUE
Pseudoalteromonas sp. 09-YP018	*Pseudoalteromonas* sp. 10B-YPO11	0	1.67	0.065	3	11.29	TRUE
Pseudoalteromonas sp. 09-YP018	*Pseudoalteromonas* sp. 09-YPC29	0	0	0.065	3	0.00	FALSE
Pseudoalteromonas sp. 09-YP018	*Pseudoalteromonas* sp. 06-SWC23	0	0.5	0.065	3	3.39	FALSE
Pseudoalteromonas sp. 09-YP018	*Pseudoalteromonas* sp. 02-YPC22	0	1.97	0.065	3	13.32	TRUE
Pseudoalteromonas sp. 09-YP018	*Pseudoalteromonas* sp. 11-YP013	0	0.5	0.065	3	3.39	FALSE
Pseudoalteromonas sp. 09-YP018	*Pseudoalteromonas* sp. 11-YPC25	0	0.63	0.065	3	4.29	TRUE
Pseudoalteromonas sp. 09-YP018	*Pseudoalteromonas* sp. 09-YP001	0	4.33	0.065	3	29.35	TRUE
Pseudoalteromonas sp. 09-YP018	*Pseudoalteromonas* sp. 11-YP016	0	2.17	0.065	3	14.67	TRUE
Pseudoalteromonas sp. 09-YP018	*Bacillus* sp. 06-YP001	0	2	0.065	3	13.54	TRUE
Pseudoalteromonas sp. 09-YP018	*Loktanella maritima* 06-YPC210	0	2	0.065	3	13.54	TRUE

Group 1 (M1)	Group 2 (M2)	M1	M2	MSw	N	Tukey's HSD q[a]	Signifcance[b]
Pseudoalteromonas sp. 09-YP018	*Loktanella maritima* 06-YPC211	0	1.67	0.065	3	11.29	TRUE
Pseudoalteromonas sp. 09-YP018	*Cobetia* sp. 10B-YPC21	0	0	0.065	3	0.00	FALSE
Pseudoalteromonas sp. 09-YP018	*Altermonas* sp. 03-YPC23	0	1.83	0.065	3	12.42	TRUE
Pseudoalteromonas sp. 09-YPC25	*Pseudoalteromonas* sp. 08-SWC22	0	1	0.065	3	6.77	TRUE
Pseudoalteromonas sp. 09-YPC25	*Pseudoalteromonas* sp. 08-YPC21	0	1.17	0.065	3	7.90	TRUE
Pseudoalteromonas sp. 09-YPC25	*Pseudoalteromonas* sp. 08-SWC21	0	1.17	0.065	3	7.90	TRUE
Pseudoalteromonas sp. 09-YPC25	*Pseudoalteromonas* sp.03-YP014	0	2.5	0.065	3	16.93	TRUE
Pseudoalteromonas sp. 09-YPC25	*Pseudoalteromonas* sp. 02-YP012	0	2	0.065	3	13.54	TRUE
Pseudoalteromonas sp. 09-YPC25	*Pseudoalteromonas* sp. 06-YPC22	0	1.83	0.065	3	12.42	TRUE
Pseudoalteromonas sp. 09-YPC25	*Pseudoalteromonas* sp. 06-YPC21	0	1.67	0.065	3	11.29	TRUE
Pseudoalteromonas sp. 09-YPC25	*Pseudoalteromonas* sp. 09-YP018	0	0	0.065	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPC25	*Pseudoalteromonas* sp. 09-YPC25	0	0	0.065	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPC25	*Pseudoalteromonas* sp. 09-YPC23	0	0	0.065	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPC25	*Pseudoalteromonas* sp. 09-YPO19	0	0.57	0.065	3	3.84	TRUE
Pseudoalteromonas sp. 09-YPC25	*Pseudoalteromonas* sp. 10B-YPO11	0	1.67	0.065	3	11.29	TRUE
Pseudoalteromonas sp. 09-YPC25	*Pseudoalteromonas* sp. 09-YPC29	0	0	0.065	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPC25	*Pseudoalteromonas* sp. 06-SWC23	0	0.5	0.065	3	3.39	FALSE
Pseudoalteromonas sp. 09-YPC25	*Pseudoalteromonas* sp. 02-YPC22	0	1.97	0.065	3	13.32	TRUE
Pseudoalteromonas sp. 09-YPC25	*Pseudoalteromonas* sp. 11-YP013	0	0.5	0.065	3	3.39	FALSE
Pseudoalteromonas sp. 09-YPC25	*Pseudoalteromonas* sp. 11-YPC25	0	0.63	0.065	3	4.29	TRUE
Pseudoalteromonas sp. 09-YPC25	*Pseudoalteromonas* sp. 09-YP001	0	4.33	0.065	3	29.35	TRUE
Pseudoalteromonas sp. 09-YPC25	*Pseudoalteromonas* sp. 11-YP016	0	2.17	0.065	3	14.67	TRUE
Pseudoalteromonas sp. 09-YPC25	*Bacillus* sp. 06-YP001	0	2	0.065	3	13.54	TRUE
Pseudoalteromonas sp. 09-YPC25	*Loktanella maritima* 06-YPC210	0	2	0.065	3	13.54	TRUE
Pseudoalteromonas sp. 09-YPC25	*Loktanella maritima* 06-YPC211	0	1.67	0.065	3	11.29	TRUE
Pseudoalteromonas sp. 09-YPC25	*Cobetia* sp. 10B-YPC21	0	0	0.065	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPC25	*Altermonas* sp. 03-YPC23	0	1.83	0.065	3	12.42	TRUE
Pseudoalteromonas sp. 09-YPC23	*Pseudoalteromonas* sp. 08-SWC22	0	1	0.065	3	6.77	TRUE
Pseudoalteromonas sp. 09-YPC23	*Pseudoalteromonas* sp. 08-YPC21	0	1.17	0.065	3	7.90	TRUE
Pseudoalteromonas sp. 09-YPC23	*Pseudoalteromonas* sp. 08-SWC21	0	1.17	0.065	3	7.90	TRUE
Pseudoalteromonas sp. 09-YPC23	*Pseudoalteromonas* sp.03-YP014	0	2.5	0.065	3	16.93	TRUE
Pseudoalteromonas sp. 09-YPC23	*Pseudoalteromonas* sp. 02-YP012	0	2	0.065	3	13.54	TRUE

Group 1 (M1)	Group 2 (M2)	M1	M2	MSw	N	Tukey's HSD q[a]	Signifcance[b]
Pseudoalteromonas sp. 09-YPC23	*Pseudoalteromonas* sp. 06-YPC22	0	1.83	0.065	3	12.42	TRUE
Pseudoalteromonas sp. 09-YPC23	*Pseudoalteromonas* sp. 06-YPC21	0	1.67	0.065	3	11.29	TRUE
Pseudoalteromonas sp. 09-YPC23	*Pseudoalteromonas* sp. 09-YP018	0	0	0.065	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPC23	*Pseudoalteromonas* sp. 09-YPC25	0	0	0.065	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPC23	*Pseudoalteromonas* sp. 09-YPC23	0	0	0.065	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPC23	*Pseudoalteromonas* sp. 09-YPO19	0	0.57	0.065	3	3.84	TRUE
Pseudoalteromonas sp. 09-YPC23	*Pseudoalteromonas* sp. 10B-YPO11	0	1.67	0.065	3	11.29	TRUE
Pseudoalteromonas sp. 09-YPC23	*Pseudoalteromonas* sp. 09-YPC29	0	0	0.065	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPC23	*Pseudoalteromonas* sp. 06-SWC23	0	0.5	0.065	3	3.39	FALSE
Pseudoalteromonas sp. 09-YPC23	*Pseudoalteromonas* sp. 02-YPC22	0	1.97	0.065	3	13.32	TRUE
Pseudoalteromonas sp. 09-YPC23	*Pseudoalteromonas* sp. 11-YP013	0	0.5	0.065	3	3.39	FALSE
Pseudoalteromonas sp. 09-YPC23	*Pseudoalteromonas* sp. 11-YPC25	0	0.63	0.065	3	4.29	TRUE
Pseudoalteromonas sp. 09-YPC23	*Pseudoalteromonas* sp. 09-YP001	0	4.33	0.065	3	29.35	TRUE
Pseudoalteromonas sp. 09-YPC23	*Pseudoalteromonas* sp. 11-YP016	0	2.17	0.065	3	14.67	TRUE
Pseudoalteromonas sp. 09-YPC23	*Bacillus* sp. 06-YP001	0	2	0.065	3	13.54	TRUE
Pseudoalteromonas sp. 09-YPC23	*Loktanella maritima* 06-YPC210	0	2	0.065	3	13.54	TRUE
Pseudoalteromonas sp. 09-YPC23	*Loktanella maritima* 06-YPC211	0	1.67	0.065	3	11.29	TRUE
Pseudoalteromonas sp. 09-YPC23	*Cobetia* sp. 10B-YPC21	0	0	0.065	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPC23	*Altermonas* sp. 03-YPC23	0	1.83	0.065	3	12.42	TRUE
Pseudoalteromonas sp.09-YPO19	*Pseudoalteromonas* sp. 08-SWC22	0.57	1	0.065	3	2.93	FALSE
Pseudoalteromonas sp.09-YPO19	*Pseudoalteromonas* sp. 08-YPC21	0.57	1.17	0.065	3	4.06	TRUE
Pseudoalteromonas sp.09-YPO19	*Pseudoalteromonas* sp. 08-SWC21	0.57	1.17	0.065	3	4.06	TRUE
Pseudoalteromonas sp.09-YPO19	*Pseudoalteromonas* sp.03-YP014	0.57	2.5	0.065	3	13.09	TRUE
Pseudoalteromonas sp.09-YPO19	*Pseudoalteromonas* sp. 02-YP012	0.57	2	0.065	3	9.71	TRUE
Pseudoalteromonas sp.09-YPO19	*Pseudoalteromonas* sp. 06-YPC22	0.57	1.83	0.065	3	8.58	TRUE
Pseudoalteromonas sp.09-YPO19	*Pseudoalteromonas* sp. 06-YPC21	0.57	1.67	0.065	3	7.45	TRUE
Pseudoalteromonas sp.09-YPO19	*Pseudoalteromonas* sp. 09-YP018	0.57	0	0.065	3	3.84	TRUE
Pseudoalteromonas sp.09-YPO19	*Pseudoalteromonas* sp. 09-YPC25	0.57	0	0.065	3	3.84	TRUE
Pseudoalteromonas sp.09-YPO19	*Pseudoalteromonas* sp. 09-YPC23	0.57	0	0.065	3	3.84	TRUE
Pseudoalteromonas sp.09-YPO19	*Pseudoalteromonas* sp. 09-YPO19	0.57	0.57	0.065	3	0.00	FALSE
Pseudoalteromonas sp.09-YPO19	*Pseudoalteromonas* sp. 10B-YPO11	0.57	1.67	0.065	3	7.45	TRUE
Pseudoalteromonas sp.09-YPO19	*Pseudoalteromonas* sp. 09-YPC29	0.57	0	0.065	3	3.84	TRUE

Group 1 (M1)	Group 2 (M2)	M1	M2	MSw	N	Tukey's HSD q[a]	Signifcance[b]
Pseudoalteromonas sp.09-YPO19	*Pseudoalteromonas* sp. 06-SWC23	0.57	0.5	0.065	3	0.45	FALSE
Pseudoalteromonas sp.09-YPO19	*Pseudoalteromonas* sp. 02-YPC22	0.57	1.97	0.065	3	9.48	TRUE
Pseudoalteromonas sp.09-YPO19	*Pseudoalteromonas* sp. 11-YP013	0.57	0.5	0.065	3	0.45	FALSE
Pseudoalteromonas sp.09-YPO19	*Pseudoalteromonas* sp. 11-YPC25	0.57	0.63	0.065	3	0.45	FALSE
Pseudoalteromonas sp.09-YPO19	*Pseudoalteromonas* sp. 09-YP001	0.57	4.33	0.065	3	25.51	TRUE
Pseudoalteromonas sp.09-YPO19	*Pseudoalteromonas* sp. 11-YP016	0.57	2.17	0.065	3	10.84	TRUE
Pseudoalteromonas sp.09-YPO19	*Bacillus* sp. 06-YP001	0.57	2	0.065	3	9.71	TRUE
Pseudoalteromonas sp.09-YPO19	*Loktanella maritima* 06-YPC210	0.57	2	0.065	3	9.71	TRUE
Pseudoalteromonas sp.09-YPO19	*Loktanella maritima* 06-YPC211	0.57	1.67	0.065	3	7.45	TRUE
Pseudoalteromonas sp.09-YPO19	*Cobetia* sp. 10B-YPC21	0.57	0	0.065	3	3.84	TRUE
Pseudoalteromonas sp.09-YPO19	*Altermonas* sp. 03-YPC23	0.57	1.83	0.065	3	8.58	TRUE
Pseudoalteromonas sp. 10B-YPO11	*Pseudoalteromonas* sp. 08-SWC22	1.67	1	0.065	3	4.51	TRUE
Pseudoalteromonas sp. 10B-YPO11	*Pseudoalteromonas* sp. 08-YPC21	1.67	1.17	0.065	3	3.39	FALSE
Pseudoalteromonas sp. 10B-YPO11	*Pseudoalteromonas* sp. 08-SWC21	1.67	1.17	0.065	3	3.39	FALSE
Pseudoalteromonas sp. 10B-YPO11	*Pseudoalteromonas* sp.03-YP014	1.67	2.5	0.065	3	5.64	TRUE
Pseudoalteromonas sp. 10B-YPO11	*Pseudoalteromonas* sp. 02-YP012	1.67	2	0.065	3	2.26	FALSE
Pseudoalteromonas sp. 10B-YPO11	*Pseudoalteromonas* sp. 06-YPC22	1.67	1.83	0.065	3	1.13	FALSE
Pseudoalteromonas sp. 10B-YPO11	*Pseudoalteromonas* sp. 06-YPC21	1.67	1.67	0.065	3	0.00	FALSE
Pseudoalteromonas sp. 10B-YPO11	*Pseudoalteromonas* sp. 09-YP018	1.67	0	0.065	3	11.29	TRUE
Pseudoalteromonas sp. 10B-YPO11	*Pseudoalteromonas* sp. 09-YPC25	1.67	0	0.065	3	11.29	TRUE
Pseudoalteromonas sp. 10B-YPO11	*Pseudoalteromonas* sp. 09-YPC23	1.67	0	0.065	3	11.29	TRUE
Pseudoalteromonas sp. 10B-YPO11	*Pseudoalteromonas* sp. 09-YPO19	1.67	0.57	0.065	3	7.45	TRUE
Pseudoalteromonas sp. 10B-YPO11	*Pseudoalteromonas* sp. 10B-YPO11	1.67	1.67	0.065	3	0.00	FALSE
Pseudoalteromonas sp. 10B-YPO11	*Pseudoalteromonas* sp. 09-YPC29	1.67	0	0.065	3	11.29	TRUE
Pseudoalteromonas sp. 10B-YPO11	*Pseudoalteromonas* sp. 06-SWC23	1.67	0.5	0.065	3	7.90	TRUE
Pseudoalteromonas sp. 10B-YPO11	*Pseudoalteromonas* sp. 02-YPC22	1.67	1.97	0.065	3	2.03	FALSE
Pseudoalteromonas sp. 10B-YPO11	*Pseudoalteromonas* sp. 11-YP013	1.67	0.5	0.065	3	7.90	TRUE
Pseudoalteromonas sp. 10B-YPO11	*Pseudoalteromonas* sp. 11-YPC25	1.67	0.63	0.065	3	7.00	TRUE
Pseudoalteromonas sp. 10B-YPO11	*Pseudoalteromonas* sp. 09-YP001	1.67	4.33	0.065	3	18.06	TRUE
Pseudoalteromonas sp. 10B-YPO11	*Pseudoalteromonas* sp. 11-YP016	1.67	2.17	0.065	3	3.39	FALSE
Pseudoalteromonas sp. 10B-YPO11	*Bacillus* sp. 06-YP001	1.67	2	0.065	3	2.26	FALSE
Pseudoalteromonas sp. 10B-YPO11	*Loktanella maritima* 06-YPC210	1.67	2	0.065	3	2.26	FALSE

Group 1 (M1)	Group 2 (M2)	M1	M2	MSw	N	Tukey's HSD q[a]	Signifcance[b]
Pseudoalteromonas sp. 10B-YPO11	*Loktanella maritima* 06-YPC211	1.67	1.67	0.065	3	0.00	FALSE
Pseudoalteromonas sp. 10B-YPO11	*Cobetia* sp. 10B-YPC21	1.67	0	0.065	3	11.29	TRUE
Pseudoalteromonas sp. 10B-YPO11	*Altermonas* sp. 03-YPC23	1.67	1.83	0.065	3	1.13	FALSE
Pseudoalteromonas sp. 09-YPC29	*Pseudoalteromonas* sp. 08-SWC22	0	1	0.065	3	6.77	TRUE
Pseudoalteromonas sp. 09-YPC29	*Pseudoalteromonas* sp. 08-YPC21	0	1.17	0.065	3	7.90	TRUE
Pseudoalteromonas sp. 09-YPC29	*Pseudoalteromonas* sp. 08-SWC21	0	1.17	0.065	3	7.90	TRUE
Pseudoalteromonas sp. 09-YPC29	*Pseudoalteromonas* sp.03-YP014	0	2.5	0.065	3	16.93	TRUE
Pseudoalteromonas sp. 09-YPC29	*Pseudoalteromonas* sp. 02-YP012	0	2	0.065	3	13.54	TRUE
Pseudoalteromonas sp. 09-YPC29	*Pseudoalteromonas* sp. 06-YPC22	0	1.83	0.065	3	12.42	TRUE
Pseudoalteromonas sp. 09-YPC29	*Pseudoalteromonas* sp. 06-YPC21	0	1.67	0.065	3	11.29	TRUE
Pseudoalteromonas sp. 09-YPC29	*Pseudoalteromonas* sp. 09-YP018	0	0	0.065	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPC29	*Pseudoalteromonas* sp. 09-YPC25	0	0	0.065	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPC29	*Pseudoalteromonas* sp. 09-YPC23	0	0	0.065	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPC29	*Pseudoalteromonas* sp. 09-YPO19	0	0.57	0.065	3	3.84	TRUE
Pseudoalteromonas sp. 09-YPC29	*Pseudoalteromonas* sp. 10B-YPO11	0	1.67	0.065	3	11.29	TRUE
Pseudoalteromonas sp. 09-YPC29	*Pseudoalteromonas* sp. 09-YPC29	0	0	0.065	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPC29	*Pseudoalteromonas* sp. 06-SWC23	0	0.5	0.065	3	3.39	FALSE
Pseudoalteromonas sp. 09-YPC29	*Pseudoalteromonas* sp. 02-YPC22	0	1.97	0.065	3	13.32	TRUE
Pseudoalteromonas sp. 09-YPC29	*Pseudoalteromonas* sp. 11-YP013	0	0.5	0.065	3	3.39	FALSE
Pseudoalteromonas sp. 09-YPC29	*Pseudoalteromonas* sp. 11-YPC25	0	0.63	0.065	3	4.29	TRUE
Pseudoalteromonas sp. 09-YPC29	*Pseudoalteromonas* sp. 09-YP001	0	4.33	0.065	3	29.35	TRUE
Pseudoalteromonas sp. 09-YPC29	*Pseudoalteromonas* sp. 11-YP016	0	2.17	0.065	3	14.67	TRUE
Pseudoalteromonas sp. 09-YPC29	*Bacillus* sp. 06-YP001	0	2	0.065	3	13.54	TRUE
Pseudoalteromonas sp. 09-YPC29	*Loktanella maritima* 06-YPC210	0	2	0.065	3	13.54	TRUE
Pseudoalteromonas sp. 09-YPC29	*Loktanella maritima* 06-YPC211	0	1.67	0.065	3	11.29	TRUE
Pseudoalteromonas sp. 09-YPC29	*Cobetia* sp. 10B-YPC21	0	0	0.065	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPC29	*Altermonas* sp. 03-YPC23	0	1.83	0.065	3	12.42	TRUE
Pseudoalteromonas sp. 06-SWC23	*Pseudoalteromonas* sp. 08-SWC22	0.5	1	0.065	3	3.39	FALSE
Pseudoalteromonas sp. 06-SWC23	*Pseudoalteromonas* sp. 08-YPC21	0.5	1.17	0.065	3	4.51	TRUE
Pseudoalteromonas sp. 06-SWC23	*Pseudoalteromonas* sp. 08-SWC21	0.5	1.17	0.065	3	4.51	TRUE
Pseudoalteromonas sp. 06-SWC23	*Pseudoalteromonas* sp.03-YP014	0.5	2.5	0.065	3	13.54	TRUE
Pseudoalteromonas sp. 06-SWC23	*Pseudoalteromonas* sp. 02-YP012	0.5	2	0.065	3	10.16	TRUE

Group 1 (M1)	Group 2 (M2)	M1	M2	MSw	N	Tukey's HSD q[a]	Signifcance[b]
Pseudoalteromonas sp. 06-SWC23	*Pseudoalteromonas* sp. 06-YPC22	0.5	1.83	0.065	3	9.03	TRUE
Pseudoalteromonas sp. 06-SWC23	*Pseudoalteromonas* sp. 06-YPC21	0.5	1.67	0.065	3	7.90	TRUE
Pseudoalteromonas sp. 06-SWC23	*Pseudoalteromonas* sp. 09-YP018	0.5	0	0.065	3	3.39	FALSE
Pseudoalteromonas sp. 06-SWC23	*Pseudoalteromonas* sp. 09-YPC25	0.5	0	0.065	3	3.39	FALSE
Pseudoalteromonas sp. 06-SWC23	*Pseudoalteromonas* sp. 09-YPC23	0.5	0	0.065	3	3.39	FALSE
Pseudoalteromonas sp. 06-SWC23	*Pseudoalteromonas* sp. 09-YPO19	0.5	0.57	0.065	3	0.45	FALSE
Pseudoalteromonas sp. 06-SWC23	*Pseudoalteromonas* sp. 10B-YPO11	0.5	1.67	0.065	3	7.90	TRUE
Pseudoalteromonas sp. 06-SWC23	*Pseudoalteromonas* sp. 09-YPC29	0.5	0	0.065	3	3.39	FALSE
Pseudoalteromonas sp. 06-SWC23	*Pseudoalteromonas* sp. 06-SWC23	0.5	0.5	0.065	3	0.00	FALSE
Pseudoalteromonas sp. 06-SWC23	*Pseudoalteromonas* sp. 02-YPC22	0.5	1.97	0.065	3	9.93	TRUE
Pseudoalteromonas sp. 06-SWC23	*Pseudoalteromonas* sp. 11-YP013	0.5	0.5	0.065	3	0.00	FALSE
Pseudoalteromonas sp. 06-SWC23	*Pseudoalteromonas* sp. 11-YPC25	0.5	0.63	0.065	3	0.90	FALSE
Pseudoalteromonas sp. 06-SWC23	*Pseudoalteromonas* sp. 09-YP001	0.5	4.33	0.065	3	25.96	TRUE
Pseudoalteromonas sp. 06-SWC23	*Pseudoalteromonas* sp. 11-YP016	0.5	2.17	0.065	3	11.29	TRUE
Pseudoalteromonas sp. 06-SWC23	*Bacillus* sp. 06-YP001	0.5	2	0.065	3	10.16	TRUE
Pseudoalteromonas sp. 06-SWC23	*Loktanella maritima* 06-YPC210	0.5	2	0.065	3	10.16	TRUE
Pseudoalteromonas sp. 06-SWC23	*Loktanella maritima* 06-YPC211	0.5	1.67	0.065	3	7.90	TRUE
Pseudoalteromonas sp. 06-SWC23	*Cobetia* sp. 10B-YPC21	0.5	0	0.065	3	3.39	FALSE
Pseudoalteromonas sp. 06-SWC23	*Altermonas* sp. 03-YPC23	0.5	1.83	0.065	3	9.03	TRUE
Pseudoalteromonas sp. 02-YPC22	*Pseudoalteromonas* sp. 08-SWC22	1.97	1	0.065	3	6.55	TRUE
Pseudoalteromonas sp. 02-YPC22	*Pseudoalteromonas* sp. 08-YPC21	1.97	1.17	0.065	3	5.42	TRUE
Pseudoalteromonas sp. 02-YPC22	*Pseudoalteromonas* sp. 08-SWC21	1.97	1.17	0.065	3	5.42	TRUE
Pseudoalteromonas sp. 02-YPC22	*Pseudoalteromonas* sp.03-YP014	1.97	2.5	0.065	3	3.61	TRUE
Pseudoalteromonas sp. 02-YPC22	*Pseudoalteromonas* sp. 02-YP012	1.97	2	0.065	3	0.23	FALSE
Pseudoalteromonas sp. 02-YPC22	*Pseudoalteromonas* sp. 06-YPC22	1.97	1.83	0.065	3	0.90	FALSE
Pseudoalteromonas sp. 02-YPC22	*Pseudoalteromonas* sp. 06-YPC21	1.97	1.67	0.065	3	2.03	FALSE
Pseudoalteromonas sp. 02-YPC22	*Pseudoalteromonas* sp. 09-YP018	1.97	0	0.065	3	13.32	TRUE
Pseudoalteromonas sp. 02-YPC22	*Pseudoalteromonas* sp. 09-YPC25	1.97	0	0.065	3	13.32	TRUE
Pseudoalteromonas sp. 02-YPC22	*Pseudoalteromonas* sp. 09-YPC23	1.97	0	0.065	3	13.32	TRUE
Pseudoalteromonas sp. 02-YPC22	*Pseudoalteromonas* sp. 09-YPO19	1.97	0.57	0.065	3	9.48	TRUE
Pseudoalteromonas sp. 02-YPC22	*Pseudoalteromonas* sp. 10B-YPO11	1.97	1.67	0.065	3	2.03	FALSE
Pseudoalteromonas sp. 02-YPC22	*Pseudoalteromonas* sp. 09-YPC29	1.97	0	0.065	3	13.32	TRUE

Group 1 (M1)	Group 2 (M2)	M1	M2	MSw	N	Tukey's HSD q[a]	Signifcance[b]
Pseudoalteromonas sp. 02-YPC22	*Pseudoalteromonas* sp. 06-SWC23	1.97	0.5	0.065	3	9.93	TRUE
Pseudoalteromonas sp. 02-YPC22	*Pseudoalteromonas* sp. 02-YPC22	1.97	1.97	0.065	3	0.00	FALSE
Pseudoalteromonas sp. 02-YPC22	*Pseudoalteromonas* sp. 11-YP013	1.97	0.5	0.065	3	9.93	TRUE
Pseudoalteromonas sp. 02-YPC22	*Pseudoalteromonas* sp. 11-YPC25	1.97	0.63	0.065	3	9.03	TRUE
Pseudoalteromonas sp. 02-YPC22	*Pseudoalteromonas* sp. 09-YP001	1.97	4.33	0.065	3	16.03	TRUE
Pseudoalteromonas sp. 02-YPC22	*Pseudoalteromonas* sp. 11-YP016	1.97	2.17	0.065	3	1.35	FALSE
Pseudoalteromonas sp. 02-YPC22	*Bacillus* sp. 06-YP001	1.97	2	0.065	3	0.23	FALSE
Pseudoalteromonas sp. 02-YPC22	*Loktanella maritima* 06-YPC210	1.97	2	0.065	3	0.23	FALSE
Pseudoalteromonas sp. 02-YPC22	*Loktanella maritima* 06-YPC211	1.97	1.67	0.065	3	2.03	FALSE
Pseudoalteromonas sp. 02-YPC22	*Cobetia* sp. 10B-YPC21	1.97	0	0.065	3	13.32	TRUE
Pseudoalteromonas sp. 02-YPC22	*Altermonas* sp. 03-YPC23	1.97	1.83	0.065	3	0.90	FALSE
Pseudoalteromonas sp. 11-YP013	*Pseudoalteromonas* sp. 08-SWC22	0.5	1	0.065	3	3.39	FALSE
Pseudoalteromonas sp. 11-YP013	*Pseudoalteromonas* sp. 08-YPC21	0.5	1.17	0.065	3	4.51	TRUE
Pseudoalteromonas sp. 11-YP013	*Pseudoalteromonas* sp. 08-SWC21	0.5	1.17	0.065	3	4.51	TRUE
Pseudoalteromonas sp. 11-YP013	*Pseudoalteromonas* sp.03-YP014	0.5	2.5	0.065	3	13.54	TRUE
Pseudoalteromonas sp. 11-YP013	*Pseudoalteromonas* sp. 02-YP012	0.5	2	0.065	3	10.16	TRUE
Pseudoalteromonas sp. 11-YP013	*Pseudoalteromonas* sp. 06-YPC22	0.5	1.83	0.065	3	9.03	TRUE
Pseudoalteromonas sp. 11-YP013	*Pseudoalteromonas* sp. 06-YPC21	0.5	1.67	0.065	3	7.90	TRUE
Pseudoalteromonas sp. 11-YP013	*Pseudoalteromonas* sp. 09-YP018	0.5	0	0.065	3	3.39	FALSE
Pseudoalteromonas sp. 11-YP013	*Pseudoalteromonas* sp. 09-YPC25	0.5	0	0.065	3	3.39	FALSE
Pseudoalteromonas sp. 11-YP013	*Pseudoalteromonas* sp. 09-YPC23	0.5	0	0.065	3	3.39	FALSE
Pseudoalteromonas sp. 11-YP013	*Pseudoalteromonas* sp. 09-YPO19	0.5	0.57	0.065	3	0.45	FALSE
Pseudoalteromonas sp. 11-YP013	*Pseudoalteromonas* sp. 10B-YPO11	0.5	1.67	0.065	3	7.90	TRUE
Pseudoalteromonas sp. 11-YP013	*Pseudoalteromonas* sp. 09-YPC29	0.5	0	0.065	3	3.39	FALSE
Pseudoalteromonas sp. 11-YP013	*Pseudoalteromonas* sp. 06-SWC23	0.5	0.5	0.065	3	0.00	FALSE
Pseudoalteromonas sp. 11-YP013	*Pseudoalteromonas* sp. 02-YPC22	0.5	1.97	0.065	3	9.93	TRUE
Pseudoalteromonas sp. 11-YP013	*Pseudoalteromonas* sp. 11-YP013	0.5	0.5	0.065	3	0.00	FALSE
Pseudoalteromonas sp. 11-YP013	*Pseudoalteromonas* sp. 11-YPC25	0.5	0.63	0.065	3	0.90	FALSE
Pseudoalteromonas sp. 11-YP013	*Pseudoalteromonas* sp. 09-YP001	0.5	4.33	0.065	3	25.96	TRUE
Pseudoalteromonas sp. 11-YP013	*Pseudoalteromonas* sp. 11-YP016	0.5	2.17	0.065	3	11.29	TRUE
Pseudoalteromonas sp. 11-YP013	*Bacillus* sp. 06-YP001	0.5	2	0.065	3	10.16	TRUE
Pseudoalteromonas sp. 11-YP013	*Loktanella maritima* 06-YPC210	0.5	2	0.065	3	10.16	TRUE

Group 1 (M1)	Group 2 (M2)	M1	M2	MSw	N	Tukey's HSD q[a]	Signifcance[b]
Pseudoalteromonas sp. 11-YP013	*Loktanella maritima* 06-YPC211	0.5	1.67	0.065	3	7.90	TRUE
Pseudoalteromonas sp. 11-YP013	*Cobetia* sp. 10B-YPC21	0.5	0	0.065	3	3.39	FALSE
Pseudoalteromonas sp. 11-YP013	*Altermonas* sp. 03-YPC23	0.5	1.83	0.065	3	9.03	TRUE
Pseudoalteromonas sp. 11-YPC25	*Pseudoalteromonas* sp. 08-SWC22	0.63	1	0.065	3	2.48	FALSE
Pseudoalteromonas sp. 11-YPC25	*Pseudoalteromonas* sp. 08-YPC21	0.63	1.17	0.065	3	3.61	TRUE
Pseudoalteromonas sp. 11-YPC25	*Pseudoalteromonas* sp. 08-SWC21	0.63	1.17	0.065	3	3.61	TRUE
Pseudoalteromonas sp. 11-YPC25	*Pseudoalteromonas* sp.03-YP014	0.63	2.5	0.065	3	12.64	TRUE
Pseudoalteromonas sp. 11-YPC25	*Pseudoalteromonas* sp. 02-YP012	0.63	2	0.065	3	9.26	TRUE
Pseudoalteromonas sp. 11-YPC25	*Pseudoalteromonas* sp. 06-YPC22	0.63	1.83	0.065	3	8.13	TRUE
Pseudoalteromonas sp. 11-YPC25	*Pseudoalteromonas* sp. 06-YPC21	0.63	1.67	0.065	3	7.00	TRUE
Pseudoalteromonas sp. 11-YPC25	*Pseudoalteromonas* sp. 09-YP018	0.63	0	0.065	3	4.29	TRUE
Pseudoalteromonas sp. 11-YPC25	*Pseudoalteromonas* sp. 09-YPC25	0.63	0	0.065	3	4.29	TRUE
Pseudoalteromonas sp. 11-YPC25	*Pseudoalteromonas* sp. 09-YPC23	0.63	0	0.065	3	4.29	TRUE
Pseudoalteromonas sp. 11-YPC25	*Pseudoalteromonas* sp. 09-YPO19	0.63	0.57	0.065	3	0.45	FALSE
Pseudoalteromonas sp. 11-YPC25	*Pseudoalteromonas* sp. 10B-YPO11	0.63	1.67	0.065	3	7.00	TRUE
Pseudoalteromonas sp. 11-YPC25	*Pseudoalteromonas* sp. 09-YPC29	0.63	0	0.065	3	4.29	TRUE
Pseudoalteromonas sp. 11-YPC25	*Pseudoalteromonas* sp. 06-SWC23	0.63	0.5	0.065	3	0.90	FALSE
Pseudoalteromonas sp. 11-YPC25	*Pseudoalteromonas* sp. 02-YPC22	0.63	1.97	0.065	3	9.03	TRUE
Pseudoalteromonas sp. 11-YPC25	*Pseudoalteromonas* sp. 11-YP013	0.63	0.5	0.065	3	0.90	FALSE
Pseudoalteromonas sp. 11-YPC25	*Pseudoalteromonas* sp. 11-YPC25	0.63	0.63	0.065	3	0.00	FALSE
Pseudoalteromonas sp. 11-YPC25	*Pseudoalteromonas* sp. 09-YP001	0.63	4.33	0.065	3	25.06	TRUE
Pseudoalteromonas sp. 11-YPC25	*Pseudoalteromonas* sp. 11-YP016	0.63	2.17	0.065	3	10.38	TRUE
Pseudoalteromonas sp. 11-YPC25	*Bacillus* sp. 06-YP001	0.63	2	0.065	3	9.26	TRUE
Pseudoalteromonas sp. 11-YPC25	*Loktanella maritima* 06-YPC210	0.63	2	0.065	3	9.26	TRUE
Pseudoalteromonas sp. 11-YPC25	*Loktanella maritima* 06-YPC211	0.63	1.67	0.065	3	7.00	TRUE
Pseudoalteromonas sp. 11-YPC25	*Cobetia* sp. 10B-YPC21	0.63	0	0.065	3	4.29	TRUE
Pseudoalteromonas sp. 11-YPC25	*Altermonas* sp. 03-YPC23	0.63	1.83	0.065	3	8.13	TRUE
Pseudoalteromonas sp. 09-YP001	*Pseudoalteromonas* sp. 08-SWC22	4.33	1	0.065	3	22.57	TRUE
Pseudoalteromonas sp. 09-YP001	*Pseudoalteromonas* sp. 08-YPC21	4.33	1.17	0.065	3	21.44	TRUE
Pseudoalteromonas sp. 09-YP001	*Pseudoalteromonas* sp. 08-SWC21	4.33	1.17	0.065	3	21.44	TRUE
Pseudoalteromonas sp. 09-YP001	*Pseudoalteromonas* sp.03-YP014	4.33	2.5	0.065	3	12.42	TRUE
Pseudoalteromonas sp. 09-YP001	*Pseudoalteromonas* sp. 02-YP012	4.33	2	0.065	3	15.80	TRUE

Group 1 (M1)	Group 2 (M2)	M1	M2	MSw	N	Tukey's HSD q[a]	Signifcance[b]
Pseudoalteromonas sp. 09-YP001	*Pseudoalteromonas* sp. 06-YPC22	4.33	1.83	0.065	3	16.93	TRUE
Pseudoalteromonas sp. 09-YP001	*Pseudoalteromonas* sp. 06-YPC21	4.33	1.67	0.065	3	18.06	TRUE
Pseudoalteromonas sp. 09-YP001	*Pseudoalteromonas* sp. 09-YP018	4.33	0	0.065	3	29.35	TRUE
Pseudoalteromonas sp. 09-YP001	*Pseudoalteromonas* sp. 09-YPC25	4.33	0	0.065	3	29.35	TRUE
Pseudoalteromonas sp. 09-YP001	*Pseudoalteromonas* sp. 09-YPC23	4.33	0	0.065	3	29.35	TRUE
Pseudoalteromonas sp. 09-YP001	*Pseudoalteromonas* sp. 09-YPO19	4.33	0.57	0.065	3	25.51	TRUE
Pseudoalteromonas sp. 09-YP001	*Pseudoalteromonas* sp. 10B-YPO11	4.33	1.67	0.065	3	18.06	TRUE
Pseudoalteromonas sp. 09-YP001	*Pseudoalteromonas* sp. 09-YPC29	4.33	0	0.065	3	29.35	TRUE
Pseudoalteromonas sp. 09-YP001	*Pseudoalteromonas* sp. 06-SWC23	4.33	0.5	0.065	3	25.96	TRUE
Pseudoalteromonas sp. 09-YP001	*Pseudoalteromonas* sp. 02-YPC22	4.33	1.97	0.065	3	16.03	TRUE
Pseudoalteromonas sp. 09-YP001	*Pseudoalteromonas* sp. 11-YP013	4.33	0.5	0.065	3	25.96	TRUE
Pseudoalteromonas sp. 09-YP001	*Pseudoalteromonas* sp. 11-YPC25	4.33	0.63	0.065	3	25.06	TRUE
Pseudoalteromonas sp. 09-YP001	*Pseudoalteromonas* sp. 09-YP001	4.33	4.33	0.065	3	0.00	FALSE
Pseudoalteromonas sp. 09-YP001	*Pseudoalteromonas* sp. 11-YP016	4.33	2.17	0.065	3	14.67	TRUE
Pseudoalteromonas sp. 09-YP001	*Bacillus* sp. 06-YP001	4.33	2	0.065	3	15.80	TRUE
Pseudoalteromonas sp. 09-YP001	*Loktanella maritima* 06-YPC210	4.33	2	0.065	3	15.80	TRUE
Pseudoalteromonas sp. 09-YP001	*Loktanella maritima* 06-YPC211	4.33	1.67	0.065	3	18.06	TRUE
Pseudoalteromonas sp. 09-YP001	*Cobetia* sp. 10B-YPC21	4.33	0	0.065	3	29.35	TRUE
Pseudoalteromonas sp. 09-YP001	*Altermonas* sp. 03-YPC23	4.33	1.83	0.065	3	16.93	TRUE
Pseudoalteromonas sp. 11-YP016	*Pseudoalteromonas* sp. 08-SWC22	2.17	1	0.065	3	7.90	TRUE
Pseudoalteromonas sp. 11-YP016	*Pseudoalteromonas* sp. 08-YPC21	2.17	1.17	0.065	3	6.77	TRUE
Pseudoalteromonas sp. 11-YP016	*Pseudoalteromonas* sp. 08-SWC21	2.17	1.17	0.065	3	6.77	TRUE
Pseudoalteromonas sp. 11-YP016	*Pseudoalteromonas* sp.03-YP014	2.17	2.5	0.065	3	2.26	FALSE
Pseudoalteromonas sp. 11-YP016	*Pseudoalteromonas* sp. 02-YP012	2.17	2	0.065	3	1.13	FALSE
Pseudoalteromonas sp. 11-YP016	*Pseudoalteromonas* sp. 06-YPC22	2.17	1.83	0.065	3	2.26	FALSE
Pseudoalteromonas sp. 11-YP016	*Pseudoalteromonas* sp. 06-YPC21	2.17	1.67	0.065	3	3.39	FALSE
Pseudoalteromonas sp. 11-YP016	*Pseudoalteromonas* sp. 09-YP018	2.17	0	0.065	3	14.67	TRUE
Pseudoalteromonas sp. 11-YP016	*Pseudoalteromonas* sp. 09-YPC25	2.17	0	0.065	3	14.67	TRUE
Pseudoalteromonas sp. 11-YP016	*Pseudoalteromonas* sp. 09-YPC23	2.17	0	0.065	3	14.67	TRUE
Pseudoalteromonas sp. 11-YP016	*Pseudoalteromonas* sp. 09-YPO19	2.17	0.57	0.065	3	10.84	TRUE
Pseudoalteromonas sp. 11-YP016	*Pseudoalteromonas* sp. 10B-YPO11	2.17	1.67	0.065	3	3.39	FALSE
Pseudoalteromonas sp. 11-YP016	*Pseudoalteromonas* sp. 09-YPC29	2.17	0	0.065	3	14.67	TRUE

Group 1 (M1)	Group 2 (M2)	M1	M2	MSw	N	Tukey's HSD q[a]	Signifcance[b]
Pseudoalteromonas sp. 11-YP016	*Pseudoalteromonas* sp. 06-SWC23	2.17	0.5	0.065	3	11.29	TRUE
Pseudoalteromonas sp. 11-YP016	*Pseudoalteromonas* sp. 02-YPC22	2.17	1.97	0.065	3	1.35	FALSE
Pseudoalteromonas sp. 11-YP016	*Pseudoalteromonas* sp. 11-YP013	2.17	0.5	0.065	3	11.29	TRUE
Pseudoalteromonas sp. 11-YP016	*Pseudoalteromonas* sp. 11-YPC25	2.17	0.63	0.065	3	10.38	TRUE
Pseudoalteromonas sp. 11-YP016	*Pseudoalteromonas* sp. 09-YP001	2.17	4.33	0.065	3	14.67	TRUE
Pseudoalteromonas sp. 11-YP016	*Pseudoalteromonas* sp. 11-YP016	2.17	2.17	0.065	3	0.00	FALSE
Pseudoalteromonas sp. 11-YP016	*Bacillus* sp. 06-YP001	2.17	2	0.065	3	1.13	FALSE
Pseudoalteromonas sp. 11-YP016	*Loktanella maritima* 06-YPC210	2.17	2	0.065	3	1.13	FALSE
Pseudoalteromonas sp. 11-YP016	*Loktanella maritima* 06-YPC211	2.17	1.67	0.065	3	3.39	FALSE
Pseudoalteromonas sp. 11-YP016	*Cobetia* sp. 10B-YPC21	2.17	0	0.065	3	14.67	TRUE
Pseudoalteromonas sp. 11-YP016	*Altermonas* sp. 03-YPC23	2.17	1.83	0.065	3	2.26	FALSE
Bacillus sp. 06-YP001	*Pseudoalteromonas* sp. 08-SWC22	2	1	0.065	3	6.77	TRUE
Bacillus sp. 06-YP001	*Pseudoalteromonas* sp. 08-YPC21	2	1.17	0.065	3	5.64	TRUE
Bacillus sp. 06-YP001	*Pseudoalteromonas* sp. 08-SWC21	2	1.17	0.065	3	5.64	TRUE
Bacillus sp. 06-YP001	*Pseudoalteromonas* sp.03-YP014	2	2.5	0.065	3	3.39	FALSE
Bacillus sp. 06-YP001	*Pseudoalteromonas* sp. 02-YP012	2	2	0.065	3	0.00	FALSE
Bacillus sp. 06-YP001	*Pseudoalteromonas* sp. 06-YPC22	2	1.83	0.065	3	1.13	FALSE
Bacillus sp. 06-YP001	*Pseudoalteromonas* sp. 06-YPC21	2	1.67	0.065	3	2.26	FALSE
Bacillus sp. 06-YP001	*Pseudoalteromonas* sp. 09-YP018	2	0	0.065	3	13.54	TRUE
Bacillus sp. 06-YP001	*Pseudoalteromonas* sp. 09-YPC25	2	0	0.065	3	13.54	TRUE
Bacillus sp. 06-YP001	*Pseudoalteromonas* sp. 09-YPC23	2	0	0.065	3	13.54	TRUE
Bacillus sp. 06-YP001	*Pseudoalteromonas* sp. 09-YPO19	2	0.57	0.065	3	9.71	TRUE
Bacillus sp. 06-YP001	*Pseudoalteromonas* sp. 10B-YPO11	2	1.67	0.065	3	2.26	FALSE
Bacillus sp. 06-YP001	*Pseudoalteromonas* sp. 09-YPC29	2	0	0.065	3	13.54	TRUE
Bacillus sp. 06-YP001	*Pseudoalteromonas* sp. 06-SWC23	2	0.5	0.065	3	10.16	TRUE
Bacillus sp. 06-YP001	*Pseudoalteromonas* sp. 02-YPC22	2	1.97	0.065	3	0.23	FALSE
Bacillus sp. 06-YP001	*Pseudoalteromonas* sp. 11-YP013	2	0.5	0.065	3	10.16	TRUE
Bacillus sp. 06-YP001	*Pseudoalteromonas* sp. 11-YPC25	2	0.63	0.065	3	9.26	TRUE
Bacillus sp. 06-YP001	*Pseudoalteromonas* sp. 09-YP001	2	4.33	0.065	3	15.80	TRUE
Bacillus sp. 06-YP001	*Pseudoalteromonas* sp. 11-YP016	2	2.17	0.065	3	1.13	FALSE
Bacillus sp. 06-YP001	*Bacillus* sp. 06-YP001	2	2	0.065	3	0.00	FALSE
Bacillus sp. 06-YP001	*Loktanella maritima* 06-YPC210	2	2	0.065	3	0.00	FALSE

Group 1 (M1)	Group 2 (M2)	M1	M2	MSw	N	Tukey's HSD q[a]	Signifcance[b]
Bacillus sp. 06-YP001	*Loktanella maritima* 06-YPC211	2	1.67	0.065	3	2.26	FALSE
Bacillus sp. 06-YP001	*Cobetia* sp. 10B-YPC21	2	0	0.065	3	13.54	TRUE
Bacillus sp. 06-YP001	*Altermonas* sp. 03-YPC23	2	1.83	0.065	3	1.13	FALSE
Loktanella maritima 06-YPC210	*Pseudoalteromonas* sp. 08-SWC22	2	1	0.065	3	6.77	TRUE
Loktanella maritima 06-YPC210	*Pseudoalteromonas* sp. 08-YPC21	2	1.17	0.065	3	5.64	TRUE
Loktanella maritima 06-YPC210	*Pseudoalteromonas* sp. 08-SWC21	2	1.17	0.065	3	5.64	TRUE
Loktanella maritima 06-YPC210	*Pseudoalteromonas* sp.03-YP014	2	2.5	0.065	3	3.39	FALSE
Loktanella maritima 06-YPC210	*Pseudoalteromonas* sp. 02-YP012	2	2	0.065	3	0.00	FALSE
Loktanella maritima 06-YPC210	*Pseudoalteromonas* sp. 06-YPC22	2	1.83	0.065	3	1.13	FALSE
Loktanella maritima 06-YPC210	*Pseudoalteromonas* sp. 06-YPC21	2	1.67	0.065	3	2.26	FALSE
Loktanella maritima 06-YPC210	*Pseudoalteromonas* sp. 09-YP018	2	0	0.065	3	13.54	TRUE
Loktanella maritima 06-YPC210	*Pseudoalteromonas* sp. 09-YPC25	2	0	0.065	3	13.54	TRUE
Loktanella maritima 06-YPC210	*Pseudoalteromonas* sp. 09-YPC23	2	0	0.065	3	13.54	TRUE
Loktanella maritima 06-YPC210	*Pseudoalteromonas* sp. 09-YPO19	2	0.57	0.065	3	9.71	TRUE
Loktanella maritima 06-YPC210	*Pseudoalteromonas* sp. 10B-YPO11	2	1.67	0.065	3	2.26	FALSE
Loktanella maritima 06-YPC210	*Pseudoalteromonas* sp. 09-YPC29	2	0	0.065	3	13.54	TRUE
Loktanella maritima 06-YPC210	*Pseudoalteromonas* sp. 06-SWC23	2	0.5	0.065	3	10.16	TRUE
Loktanella maritima 06-YPC210	*Pseudoalteromonas* sp. 02-YPC22	2	1.97	0.065	3	0.23	FALSE
Loktanella maritima 06-YPC210	*Pseudoalteromonas* sp. 11-YP013	2	0.5	0.065	3	10.16	TRUE
Loktanella maritima 06-YPC210	*Pseudoalteromonas* sp. 11-YPC25	2	0.63	0.065	3	9.26	TRUE
Loktanella maritima 06-YPC210	*Pseudoalteromonas* sp. 09-YP001	2	4.33	0.065	3	15.80	TRUE
Loktanella maritima 06-YPC210	*Pseudoalteromonas* sp. 11-YP016	2	2.17	0.065	3	1.13	FALSE
Loktanella maritima 06-YPC210	*Bacillus* sp. 06-YP001	2	2	0.065	3	0.00	FALSE
Loktanella maritima 06-YPC210	*Loktanella maritima* 06-YPC210	2	2	0.065	3	0.00	FALSE
Loktanella maritima 06-YPC210	*Loktanella maritima* 06-YPC211	2	1.67	0.065	3	2.26	FALSE
Loktanella maritima 06-YPC210	*Cobetia* sp. 10B-YPC21	2	0	0.065	3	13.54	TRUE
Loktanella maritima 06-YPC210	*Altermonas* sp. 03-YPC23	2	1.83	0.065	3	1.13	FALSE
Loktanella maritima 06-YPC211	*Pseudoalteromonas* sp. 08-SWC22	1.67	1	0.065	3	4.51	TRUE
Loktanella maritima 06-YPC211	*Pseudoalteromonas* sp. 08-YPC21	1.67	1.17	0.065	3	3.39	FALSE
Loktanella maritima 06-YPC211	*Pseudoalteromonas* sp. 08-SWC21	1.67	1.17	0.065	3	3.39	FALSE
Loktanella maritima 06-YPC211	*Pseudoalteromonas* sp.03-YP014	1.67	2.5	0.065	3	5.64	TRUE
Loktanella maritima 06-YPC211	*Pseudoalteromonas* sp. 02-YP012	1.67	2	0.065	3	2.26	FALSE

Group 1 (M1)	Group 2 (M2)	M1	M2	MSw	N	Tukey's HSD q[a]	Signifcance[b]
Loktanella maritima 06-YPC211	*Pseudoalteromonas* sp. 06-YPC22	1.67	1.83	0.065	3	1.13	FALSE
Loktanella maritima 06-YPC211	*Pseudoalteromonas* sp. 06-YPC21	1.67	1.67	0.065	3	0.00	FALSE
Loktanella maritima 06-YPC211	*Pseudoalteromonas* sp. 09-YP018	1.67	0	0.065	3	11.29	TRUE
Loktanella maritima 06-YPC211	*Pseudoalteromonas* sp. 09-YPC25	1.67	0	0.065	3	11.29	TRUE
Loktanella maritima 06-YPC211	*Pseudoalteromonas* sp. 09-YPC23	1.67	0	0.065	3	11.29	TRUE
Loktanella maritima 06-YPC211	*Pseudoalteromonas* sp. 09-YPO19	1.67	0.57	0.065	3	7.45	TRUE
Loktanella maritima 06-YPC211	*Pseudoalteromonas* sp. 10B-YPO11	1.67	1.67	0.065	3	0.00	FALSE
Loktanella maritima 06-YPC211	*Pseudoalteromonas* sp. 09-YPC29	1.67	0	0.065	3	11.29	TRUE
Loktanella maritima 06-YPC211	*Pseudoalteromonas* sp. 06-SWC23	1.67	0.5	0.065	3	7.90	TRUE
Loktanella maritima 06-YPC211	*Pseudoalteromonas* sp. 02-YPC22	1.67	1.97	0.065	3	2.03	FALSE
Loktanella maritima 06-YPC211	*Pseudoalteromonas* sp. 11-YP013	1.67	0.5	0.065	3	7.90	TRUE
Loktanella maritima 06-YPC211	*Pseudoalteromonas* sp. 11-YPC25	1.67	0.63	0.065	3	7.00	TRUE
Loktanella maritima 06-YPC211	*Pseudoalteromonas* sp. 09-YP001	1.67	4.33	0.065	3	18.06	TRUE
Loktanella maritima 06-YPC211	*Pseudoalteromonas* sp. 11-YP016	1.67	2.17	0.065	3	3.39	FALSE
Loktanella maritima 06-YPC211	*Bacillus* sp. 06-YP001	1.67	2	0.065	3	2.26	FALSE
Loktanella maritima 06-YPC211	*Loktanella maritima* 06-YPC210	1.67	2	0.065	3	2.26	FALSE
Loktanella maritima 06-YPC211	*Loktanella maritima* 06-YPC211	1.67	1.67	0.065	3	0.00	FALSE
Loktanella maritima 06-YPC211	*Cobetia* sp. 10B-YPC21	1.67	0	0.065	3	11.29	TRUE
Loktanella maritima 06-YPC211	*Altermonas* sp. 03-YPC23	1.67	1.83	0.065	3	1.13	FALSE
Cobetia sp. 10B-YPC21	*Pseudoalteromonas* sp. 08-SWC22	0	1	0.065	3	6.77	TRUE
Cobetia sp. 10B-YPC21	*Pseudoalteromonas* sp. 08-YPC21	0	1.17	0.065	3	7.90	TRUE
Cobetia sp. 10B-YPC21	*Pseudoalteromonas* sp. 08-SWC21	0	1.17	0.065	3	7.90	TRUE
Cobetia sp. 10B-YPC21	*Pseudoalteromonas* sp.03-YP014	0	2.5	0.065	3	16.93	TRUE
Cobetia sp. 10B-YPC21	*Pseudoalteromonas* sp. 02-YP012	0	2	0.065	3	13.54	TRUE
Cobetia sp. 10B-YPC21	*Pseudoalteromonas* sp. 06-YPC22	0	1.83	0.065	3	12.42	TRUE
Cobetia sp. 10B-YPC21	*Pseudoalteromonas* sp. 06-YPC21	0	1.67	0.065	3	11.29	TRUE
Cobetia sp. 10B-YPC21	*Pseudoalteromonas* sp. 09-YP018	0	0	0.065	3	0.00	FALSE
Cobetia sp. 10B-YPC21	*Pseudoalteromonas* sp. 09-YPC25	0	0	0.065	3	0.00	FALSE
Cobetia sp. 10B-YPC21	*Pseudoalteromonas* sp. 09-YPC23	0	0	0.065	3	0.00	FALSE
Cobetia sp. 10B-YPC21	*Pseudoalteromonas* sp. 09-YPO19	0	0.57	0.065	3	3.84	TRUE
Cobetia sp. 10B-YPC21	*Pseudoalteromonas* sp. 10B-YPO11	0	1.67	0.065	3	11.29	TRUE
Cobetia sp. 10B-YPC21	*Pseudoalteromonas* sp. 09-YPC29	0	0	0.065	3	0.00	FALSE

Group 1 (M1)	Group 2 (M2)	M1	M2	MSw	N	Tukey's HSD q[a]	Signifcance[b]
Cobetia sp. 10B-YPC21	*Pseudoalteromonas* sp. 06-SWC23	0	0.5	0.065	3	3.39	FALSE
Cobetia sp. 10B-YPC21	*Pseudoalteromonas* sp. 02-YPC22	0	1.97	0.065	3	13.32	TRUE
Cobetia sp. 10B-YPC21	*Pseudoalteromonas* sp. 11-YP013	0	0.5	0.065	3	3.39	FALSE
Cobetia sp. 10B-YPC21	*Pseudoalteromonas* sp. 11-YPC25	0	0.63	0.065	3	4.29	TRUE
Cobetia sp. 10B-YPC21	*Pseudoalteromonas* sp. 09-YP001	0	4.33	0.065	3	29.35	TRUE
Cobetia sp. 10B-YPC21	*Pseudoalteromonas* sp. 11-YP016	0	2.17	0.065	3	14.67	TRUE
Cobetia sp. 10B-YPC21	*Bacillus* sp. 06-YP001	0	2	0.065	3	13.54	TRUE
Cobetia sp. 10B-YPC21	*Loktanella maritima* 06-YPC210	0	2	0.065	3	13.54	TRUE
Cobetia sp. 10B-YPC21	*Loktanella maritima* 06-YPC211	0	1.67	0.065	3	11.29	TRUE
Cobetia sp. 10B-YPC21	*Cobetia* sp. 10B-YPC21	0	0	0.065	3	0.00	FALSE
Cobetia sp. 10B-YPC21	*Altermonas* sp. 03-YPC23	0	1.83	0.065	3	12.42	TRUE
Altermonas sp. 03-YPC23	*Pseudoalteromonas* sp. 08-SWC22	1.83	1	0.065	3	5.64	TRUE
Altermonas sp. 03-YPC23	*Pseudoalteromonas* sp. 08-YPC21	1.83	1.17	0.065	3	4.51	TRUE
Altermonas sp. 03-YPC23	*Pseudoalteromonas* sp. 08-SWC21	1.83	1.17	0.065	3	4.51	TRUE
Altermonas sp. 03-YPC23	*Pseudoalteromonas* sp.03-YP014	1.83	2.5	0.065	3	4.51	TRUE
Altermonas sp. 03-YPC23	*Pseudoalteromonas* sp. 02-YP012	1.83	2	0.065	3	1.13	FALSE
Altermonas sp. 03-YPC23	*Pseudoalteromonas* sp. 06-YPC22	1.83	1.83	0.065	3	0.00	FALSE
Altermonas sp. 03-YPC23	*Pseudoalteromonas* sp. 06-YPC21	1.83	1.67	0.065	3	1.13	FALSE
Altermonas sp. 03-YPC23	*Pseudoalteromonas* sp. 09-YP018	1.83	0	0.065	3	12.42	TRUE
Altermonas sp. 03-YPC23	*Pseudoalteromonas* sp. 09-YPC25	1.83	0	0.065	3	12.42	TRUE
Altermonas sp. 03-YPC23	*Pseudoalteromonas* sp. 09-YPC23	1.83	0	0.065	3	12.42	TRUE
Altermonas sp. 03-YPC23	*Pseudoalteromonas* sp. 09-YPO19	1.83	0.57	0.065	3	8.58	TRUE
Altermonas sp. 03-YPC23	*Pseudoalteromonas* sp. 10B-YPO11	1.83	1.67	0.065	3	1.13	FALSE
Altermonas sp. 03-YPC23	*Pseudoalteromonas* sp. 09-YPC29	1.83	0	0.065	3	12.42	TRUE
Altermonas sp. 03-YPC23	*Pseudoalteromonas* sp. 06-SWC23	1.83	0.5	0.065	3	9.03	TRUE
Altermonas sp. 03-YPC23	*Pseudoalteromonas* sp. 02-YPC22	1.83	1.97	0.065	3	0.90	FALSE
Altermonas sp. 03-YPC23	*Pseudoalteromonas* sp. 11-YP013	1.83	0.5	0.065	3	9.03	TRUE
Altermonas sp. 03-YPC23	*Pseudoalteromonas* sp. 11-YPC25	1.83	0.63	0.065	3	8.13	TRUE
Altermonas sp. 03-YPC23	*Pseudoalteromonas* sp. 09-YP001	1.83	4.33	0.065	3	16.93	TRUE
Altermonas sp. 03-YPC23	*Pseudoalteromonas* sp. 11-YP016	1.83	2.17	0.065	3	2.26	FALSE
Altermonas sp. 03-YPC23	*Bacillus* sp. 06-YP001	1.83	2	0.065	3	1.13	FALSE
Altermonas sp. 03-YPC23	*Loktanella maritima* 06-YPC210	1.83	2	0.065	3	1.13	FALSE

Group 1 (M1)	Group 2 (M2)	M1	M2	MSw	N	Tukey's HSD q[a]	Signifcance[b]
Altermonas sp. 03-YPC23	*Loktanella maritima* 06-YPC211	1.83	1.67	0.065	3	1.13	FALSE
Altermonas sp. 03-YPC23	*Cobetia* sp. 10B-YPC21	1.83	0	0.065	3	12.42	TRUE
Altermonas sp. 03-YPC23	*Altermonas* sp. 03-YPC23	1.83	1.83	0.065	3	0.00	FALSE

[a] Tukey 's HSD q= (M1- M2)/√(MSw x (1/n))

[b] True= Tukey 's HSD q>3.53 (blue highlight), False= Tukey 's HSD q<3.53

[c] Green highlight is comparison of self to self

Appendix 7. Tuckey Honest Significant Difference Test between OD $_{580}$ measurements

Group 1 (M1)	Group 2 (M2)	M1	M2	MSw	N	Tukey 's HSD q[a]	Signifcance[b]
Pseudoalteromonas sp. 08-SWC22	*Pseudoalteromonas* sp. 08-SWC22[c]	3.58	3.58	0.02	3	0.00	FALSE
Pseudoalteromonas sp. 08-SWC22	*Pseudoalteromonas* sp. 08-YPC21	3.58	2.55	0.02	3	11.60	TRUE
Pseudoalteromonas sp. 08-SWC22	*Pseudoalteromonas* sp. 08-SWC21	3.58	2.18	0.02	3	15.71	TRUE
Pseudoalteromonas sp. 08-SWC22	*Pseudoalteromonas* sp. 03-YP014	3.58	3.25	0.02	3	3.72	TRUE
Pseudoalteromonas sp. 08-SWC22	*Pseudoalteromonas* sp. 02-YP012	3.58	3.17	0.02	3	4.58	TRUE
Pseudoalteromonas sp. 08-SWC22	*Pseudoalteromonas* sp. 06-YPC22	3.58	3.71	0.02	3	1.54	FALSE
Pseudoalteromonas sp. 08-SWC22	*Pseudoalteromonas* sp. 06-YPC21	3.58	3.12	0.02	3	5.14	TRUE
Pseudoalteromonas sp. 08-SWC22	*Pseudoalteromonas* sp. 09-YP018	3.58	2.90	0.02	3	7.65	TRUE
Pseudoalteromonas sp. 08-SWC22	*Pseudoalteromonas* sp. 09-YPC25	3.58	2.80	0.02	3	8.76	TRUE
Pseudoalteromonas sp. 08-SWC22	*Pseudoalteromonas* sp. 09-YPC23	3.58	2.72	0.02	3	9.68	TRUE
Pseudoalteromonas sp. 08-SWC22	*Pseudoalteromonas* sp. 09-YPO19	3.58	2.87	0.02	3	8.01	TRUE
Pseudoalteromonas sp. 08-SWC22	*Pseudoalteromonas* sp. 10B-YPO11	3.58	3.33	0.02	3	2.82	FALSE
Pseudoalteromonas sp. 08-SWC22	*Pseudoalteromonas* sp. 09-YPC29	3.58	3.04	0.02	3	6.09	TRUE
Pseudoalteromonas sp. 08-SWC22	*Pseudoalteromonas* sp. 06-SWC23	3.58	2.43	0.02	3	12.87	TRUE
Pseudoalteromonas sp. 08-SWC22	*Pseudoalteromonas* sp. 02-YPC22	3.58	2.04	0.02	3	17.26	TRUE
Pseudoalteromonas sp. 08-SWC22	*Pseudoalteromonas* sp. 11-YP013	3.58	2.53	0.02	3	11.79	TRUE
Pseudoalteromonas sp. 08-SWC22	*Pseudoalteromonas* sp. 11-YPC25	3.58	1.82	0.02	3	19.82	TRUE
Pseudoalteromonas sp. 08-SWC22	*Pseudoalteromonas* sp. 09-YP001	3.58	3.18	0.02	3	4.50	TRUE
Pseudoalteromonas sp. 08-SWC22	*Pseudoalteromonas* sp. 11-YP016	3.58	2.13	0.02	3	16.24	TRUE
Pseudoalteromonas sp. 08-SWC22	*Bacillus* sp. 06-YP001	3.58	2.88	0.02	3	7.86	TRUE
Pseudoalteromonas sp. 08-SWC22	*Loktanella maritima* 06-YPC210	3.58	3.71	0.02	3	1.49	FALSE
Pseudoalteromonas sp. 08-SWC22	*Loktanella maritima* 06-YPC211	3.58	3.71	0.02	3	1.49	FALSE
Pseudoalteromonas sp. 08-SWC22	*Cobetia* sp. 10B-YPC21	3.58	3.50	0.02	3	0.91	FALSE
Pseudoalteromonas sp. 08-SWC22	*Altermonas* sp. 03-YPC23	3.58	3.18	0.02	3	4.50	TRUE
Pseudoalteromonas sp. 08-SWC22	*P. inhibens* S4	3.58	3.80	0.02	3	2.50	FALSE
Pseudoalteromonas sp. 08-YPC21	*Pseudoalteromonas* sp. 08-SWC22	2.55	3.58	0.02	3	11.60	TRUE
Pseudoalteromonas sp. 08-YPC21	*Pseudoalteromonas* sp. 08-YPC21	2.55	2.55	0.02	3	0.00	FALSE
Pseudoalteromonas sp. 08-YPC21	*Pseudoalteromonas* sp. 08-SWC21	2.55	2.18	0.02	3	4.11	TRUE
Pseudoalteromonas sp. 08-YPC21	*Pseudoalteromonas* sp. 03-YP014	2.55	3.25	0.02	3	7.88	TRUE
Pseudoalteromonas sp. 08-YPC21	*Pseudoalteromonas* sp. 02-YP012	2.55	3.17	0.02	3	7.02	TRUE
Pseudoalteromonas sp. 08-YPC21	*Pseudoalteromonas* sp. 06-YPC22	2.55	3.71	0.02	3	13.14	TRUE
Pseudoalteromonas sp. 08-YPC21	*Pseudoalteromonas* sp. 06-YPC21	2.55	3.12	0.02	3	6.45	TRUE
Pseudoalteromonas sp. 08-YPC21	*Pseudoalteromonas* sp. 09-YP018	2.55	2.90	0.02	3	3.95	TRUE
Pseudoalteromonas sp. 08-YPC21	*Pseudoalteromonas* sp. 09-YPC25	2.55	2.80	0.02	3	2.84	FALSE
Pseudoalteromonas sp. 08-YPC21	*Pseudoalteromonas* sp. 09-YPC23	2.55	2.72	0.02	3	1.92	FALSE
Pseudoalteromonas sp. 08-YPC21	*Pseudoalteromonas* sp. 09-YPO19	2.55	2.87	0.02	3	3.59	TRUE
Pseudoalteromonas sp. 08-YPC21	*Pseudoalteromonas* sp. 10B-YPO11	2.55	3.33	0.02	3	8.77	TRUE
Pseudoalteromonas sp. 08-YPC21	*Pseudoalteromonas* sp. 09-YPC29	2.55	3.04	0.02	3	5.51	TRUE
Pseudoalteromonas sp. 08-YPC21	*Pseudoalteromonas* sp. 06-SWC23	2.55	2.43	0.02	3	1.27	FALSE

Group 1 (M1)	Group 2 (M2)	M1	M2	MSw	N	Tukey 's HSD q[a]	Signifcance[b]
Pseudoalteromonas sp. 08-YPC21	*Pseudoalteromonas* sp. 02-YPC22	2.55	2.04	0.02	3	5.66	TRUE
Pseudoalteromonas sp. 08-YPC21	*Pseudoalteromonas* sp. 11-YP013	2.55	2.53	0.02	3	0.19	FALSE
Pseudoalteromonas sp. 08-YPC21	*Pseudoalteromonas* sp. 11-YPC25	2.55	1.82	0.02	3	8.22	TRUE
Pseudoalteromonas sp. 08-YPC21	*Pseudoalteromonas* sp. 09-YP001	2.55	3.18	0.02	3	7.09	TRUE
Pseudoalteromonas sp. 08-YPC21	*Pseudoalteromonas* sp. 11-YP016	2.55	2.13	0.02	3	4.65	TRUE
Pseudoalteromonas sp. 08-YPC21	*Bacillus* sp. 06-YP001	2.55	2.88	0.02	3	3.73	TRUE
Pseudoalteromonas sp. 08-YPC21	*Loktanella maritima* 06-YPC210	2.55	3.71	0.02	3	13.09	TRUE
Pseudoalteromonas sp. 08-YPC21	*Loktanella maritima* 06-YPC211	2.55	3.71	0.02	3	13.09	TRUE
Pseudoalteromonas sp. 08-YPC21	*Cobetia* sp. 10B-YPC21	2.55	3.50	0.02	3	10.69	TRUE
Pseudoalteromonas sp. 08-YPC21	*Altermonas* sp. 03-YPC23	2.55	3.18	0.02	3	7.09	TRUE
Pseudoalteromonas sp. 08-YPC21	*P. inhibens* S4	2.55	3.80	0.02	3	14.10	TRUE
Pseudoalteromonas sp. 08-SWC21	*Pseudoalteromonas* sp. 08-SWC22	2.18	3.58	0.02	3	15.71	TRUE
Pseudoalteromonas sp. 08-SWC21	*Pseudoalteromonas* sp. 08-YPC21	2.18	2.55	0.02	3	4.11	TRUE
Pseudoalteromonas sp. 08-SWC21	*Pseudoalteromonas* sp. 08-SWC21	2.18	2.18	0.02	3	0.00	FALSE
Pseudoalteromonas sp. 08-SWC21	*Pseudoalteromonas* sp. 03-YP014	2.18	3.25	0.02	3	11.99	TRUE
Pseudoalteromonas sp. 08-SWC21	*Pseudoalteromonas* sp. 02-YP012	2.18	3.17	0.02	3	11.13	TRUE
Pseudoalteromonas sp. 08-SWC21	*Pseudoalteromonas* sp. 06-YPC22	2.18	3.71	0.02	3	17.25	TRUE
Pseudoalteromonas sp. 08-SWC21	*Pseudoalteromonas* sp. 06-YPC21	2.18	3.12	0.02	3	10.57	TRUE
Pseudoalteromonas sp. 08-SWC21	*Pseudoalteromonas* sp. 09-YP018	2.18	2.90	0.02	3	8.07	TRUE
Pseudoalteromonas sp. 08-SWC21	*Pseudoalteromonas* sp. 09-YPC25	2.18	2.80	0.02	3	6.96	TRUE
Pseudoalteromonas sp. 08-SWC21	*Pseudoalteromonas* sp. 09-YPC23	2.18	2.72	0.02	3	6.03	TRUE
Pseudoalteromonas sp. 08-SWC21	*Pseudoalteromonas* sp. 09-YPO19	2.18	2.87	0.02	3	7.70	TRUE
Pseudoalteromonas sp. 08-SWC21	*Pseudoalteromonas* sp. 10B-YPO11	2.18	3.33	0.02	3	12.89	TRUE
Pseudoalteromonas sp. 08-SWC21	*Pseudoalteromonas* sp. 09-YPC29	2.18	3.04	0.02	3	9.63	TRUE
Pseudoalteromonas sp. 08-SWC21	*Pseudoalteromonas* sp. 06-SWC23	2.18	2.43	0.02	3	2.84	FALSE
Pseudoalteromonas sp. 08-SWC21	*Pseudoalteromonas* sp. 02-YPC22	2.18	2.04	0.02	3	1.54	FALSE
Pseudoalteromonas sp. 08-SWC21	*Pseudoalteromonas* sp. 11-YP013	2.18	2.53	0.02	3	3.92	TRUE
Pseudoalteromonas sp. 08-SWC21	*Pseudoalteromonas* sp. 11-YPC25	2.18	1.82	0.02	3	4.11	TRUE
Pseudoalteromonas sp. 08-SWC21	*Pseudoalteromonas* sp. 09-YP001	2.18	3.18	0.02	3	11.21	TRUE
Pseudoalteromonas sp. 08-SWC21	*Pseudoalteromonas* sp. 11-YP016	2.18	2.13	0.02	3	0.53	FALSE
Pseudoalteromonas sp. 08-SWC21	*Bacillus* sp. 06-YP001	2.18	2.88	0.02	3	7.85	TRUE
Pseudoalteromonas sp. 08-SWC21	*Loktanella maritima* 06-YPC210	2.18	3.71	0.02	3	17.20	TRUE
Pseudoalteromonas sp. 08-SWC21	*Loktanella maritima* 06-YPC211	2.18	3.71	0.02	3	17.20	TRUE
Pseudoalteromonas sp. 08-SWC21	*Cobetia* sp. 10B-YPC21	2.18	3.50	0.02	3	14.80	TRUE
Pseudoalteromonas sp. 08-SWC21	*Altermonas* sp. 03-YPC23	2.18	3.18	0.02	3	11.21	TRUE
Pseudoalteromonas sp. 08-SWC21	*P. inhibens* S4	2.18	3.80	0.02	3	18.22	TRUE
Pseudoalteromonas sp. 03-YP014	*Pseudoalteromonas* sp. 08-SWC22	3.25	3.58	0.02	3	3.72	TRUE
Pseudoalteromonas sp. 03-YP014	*Pseudoalteromonas* sp. 08-YPC21	3.25	2.55	0.02	3	7.88	TRUE
Pseudoalteromonas sp. 03-YP014	*Pseudoalteromonas* sp. 08-SWC21	3.25	2.18	0.02	3	11.99	TRUE
Pseudoalteromonas sp. 03-YP014	*Pseudoalteromonas* sp. 03-YP014	3.25	3.25	0.02	3	0.00	FALSE
Pseudoalteromonas sp. 03-YP014	*Pseudoalteromonas* sp. 02-YP012	3.25	3.17	0.02	3	0.86	FALSE
Pseudoalteromonas sp. 03-YP014	*Pseudoalteromonas* sp. 06-YPC22	3.25	3.71	0.02	3	5.26	TRUE
Pseudoalteromonas sp. 03-YP014	*Pseudoalteromonas* sp. 06-YPC21	3.25	3.12	0.02	3	1.42	FALSE

Group 1 (M1)	Group 2 (M2)	M1	M2	MSw	N	Tukey 's HSD q[a]	Signifcance[b]
Pseudoalteromonas sp. 03-YP014	*Pseudoalteromonas* sp. 09-YP018	3.25	2.90	0.02	3	3.93	TRUE
Pseudoalteromonas sp. 03-YP014	*Pseudoalteromonas* sp. 09-YPC25	3.25	2.80	0.02	3	5.04	TRUE
Pseudoalteromonas sp. 03-YP014	*Pseudoalteromonas* sp. 09-YPC23	3.25	2.72	0.02	3	5.96	TRUE
Pseudoalteromonas sp. 03-YP014	*Pseudoalteromonas* sp. 09-YPO19	3.25	2.87	0.02	3	4.29	TRUE
Pseudoalteromonas sp. 03-YP014	*Pseudoalteromonas* sp. 10B-YPO11	3.25	3.33	0.02	3	0.90	FALSE
Pseudoalteromonas sp. 03-YP014	*Pseudoalteromonas* sp. 09-YPC29	3.25	3.04	0.02	3	2.37	FALSE
Pseudoalteromonas sp. 03-YP014	*Pseudoalteromonas* sp. 06-SWC23	3.25	2.43	0.02	3	9.15	TRUE
Pseudoalteromonas sp. 03-YP014	*Pseudoalteromonas* sp. 02-YPC22	3.25	2.04	0.02	3	13.54	TRUE
Pseudoalteromonas sp. 03-YP014	*Pseudoalteromonas* sp. 11-YP013	3.25	2.53	0.02	3	8.07	TRUE
Pseudoalteromonas sp. 03-YP014	*Pseudoalteromonas* sp. 11-YPC25	3.25	1.82	0.02	3	16.10	TRUE
Pseudoalteromonas sp. 03-YP014	*Pseudoalteromonas* sp. 09-YP001	3.25	3.18	0.02	3	0.78	FALSE
Pseudoalteromonas sp. 03-YP014	*Pseudoalteromonas* sp. 11-YP016	3.25	2.13	0.02	3	12.52	TRUE
Pseudoalteromonas sp. 03-YP014	*Bacillus* sp. 06-YP001	3.25	2.88	0.02	3	4.14	TRUE
Pseudoalteromonas sp. 03-YP014	*Loktanella maritima* 06-YPC210	3.25	3.71	0.02	3	5.21	TRUE
Pseudoalteromonas sp. 03-YP014	*Loktanella maritima* 06-YPC211	3.25	3.71	0.02	3	5.21	TRUE
Pseudoalteromonas sp. 03-YP014	*Cobetia* sp. 10B-YPC21	3.25	3.50	0.02	3	2.81	FALSE
Pseudoalteromonas sp. 03-YP014	*Altermonas* sp. 03-YPC23	3.25	3.18	0.02	3	0.78	FALSE
Pseudoalteromonas sp. 03-YP014	*P. inhibens* S4	3.25	3.80	0.02	3	6.22	TRUE
Pseudoalteromonas sp. 02-YP012	*Pseudoalteromonas* sp. 08-SWC22	3.17	3.58	0.02	3	4.58	TRUE
Pseudoalteromonas sp. 02-YP012	*Pseudoalteromonas* sp. 08-YPC21	3.17	2.55	0.02	3	7.02	TRUE
Pseudoalteromonas sp. 02-YP012	*Pseudoalteromonas* sp. 08-SWC21	3.17	2.18	0.02	3	11.13	TRUE
Pseudoalteromonas sp. 02-YP012	*Pseudoalteromonas* sp. 03-YP014	3.17	3.25	0.02	3	0.86	FALSE
Pseudoalteromonas sp. 02-YP012	*Pseudoalteromonas* sp. 02-YP012	3.17	3.17	0.02	3	0.00	FALSE
Pseudoalteromonas sp. 02-YP012	*Pseudoalteromonas* sp. 06-YPC22	3.17	3.71	0.02	3	6.12	TRUE
Pseudoalteromonas sp. 02-YP012	*Pseudoalteromonas* sp. 06-YPC21	3.17	3.12	0.02	3	0.57	FALSE
Pseudoalteromonas sp. 02-YP012	*Pseudoalteromonas* sp. 09-YP018	3.17	2.90	0.02	3	3.07	FALSE
Pseudoalteromonas sp. 02-YP012	*Pseudoalteromonas* sp. 09-YPC25	3.17	2.80	0.02	3	4.18	TRUE
Pseudoalteromonas sp. 02-YP012	*Pseudoalteromonas* sp. 09-YPC23	3.17	2.72	0.02	3	5.10	TRUE
Pseudoalteromonas sp. 02-YP012	*Pseudoalteromonas* sp. 09-YPO19	3.17	2.87	0.02	3	3.43	FALSE
Pseudoalteromonas sp. 02-YP012	*Pseudoalteromonas* sp. 10B-YPO11	3.17	3.33	0.02	3	1.75	FALSE
Pseudoalteromonas sp. 02-YP012	*Pseudoalteromonas* sp. 09-YPC29	3.17	3.04	0.02	3	1.51	FALSE
Pseudoalteromonas sp. 02-YP012	*Pseudoalteromonas* sp. 06-SWC23	3.17	2.43	0.02	3	8.29	TRUE
Pseudoalteromonas sp. 02-YP012	*Pseudoalteromonas* sp. 02-YPC22	3.17	2.04	0.02	3	12.68	TRUE
Pseudoalteromonas sp. 02-YP012	*Pseudoalteromonas* sp. 11-YP013	3.17	2.53	0.02	3	7.21	TRUE
Pseudoalteromonas sp. 02-YP012	*Pseudoalteromonas* sp. 11-YPC25	3.17	1.82	0.02	3	15.24	TRUE
Pseudoalteromonas sp. 02-YP012	*Pseudoalteromonas* sp. 09-YP001	3.17	3.18	0.02	3	0.07	FALSE
Pseudoalteromonas sp. 02-YP012	*Pseudoalteromonas* sp. 11-YP016	3.17	2.13	0.02	3	11.67	TRUE
Pseudoalteromonas sp. 02-YP012	*Bacillus* sp. 06-YP001	3.17	2.88	0.02	3	3.28	FALSE
Pseudoalteromonas sp. 02-YP012	*Loktanella maritima* 06-YPC210	3.17	3.71	0.02	3	6.07	TRUE
Pseudoalteromonas sp. 02-YP012	*Loktanella maritima* 06-YPC211	3.17	3.71	0.02	3	6.07	TRUE
Pseudoalteromonas sp. 02-YP012	*Cobetia* sp. 10B-YPC21	3.17	3.50	0.02	3	3.67	TRUE
Pseudoalteromonas sp. 02-YP012	*Altermonas* sp. 03-YPC23	3.17	3.18	0.02	3	0.07	FALSE
Pseudoalteromonas sp. 02-YP012	*P. inhibens* S4	3.17	3.80	0.02	3	7.08	TRUE

Group 1 (M1)	Group 2 (M2)	M1	M2	MSw	N	Tukey 's HSD q[a]	Signifcance[b]
Pseudoalteromonas sp. 06-YPC22	*Pseudoalteromonas* sp. 08-SWC22	3.71	3.58	0.02	3	1.54	FALSE
Pseudoalteromonas sp. 06-YPC22	*Pseudoalteromonas* sp. 08-YPC21	3.71	2.55	0.02	3	13.14	TRUE
Pseudoalteromonas sp. 06-YPC22	*Pseudoalteromonas* sp. 08-SWC21	3.71	2.18	0.02	3	17.25	TRUE
Pseudoalteromonas sp. 06-YPC22	*Pseudoalteromonas* sp. 03-YP014	3.71	3.25	0.02	3	5.26	TRUE
Pseudoalteromonas sp. 06-YPC22	*Pseudoalteromonas* sp. 02-YP012	3.71	3.17	0.02	3	6.12	TRUE
Pseudoalteromonas sp. 06-YPC22	*Pseudoalteromonas* sp. 06-YPC22	3.71	3.71	0.02	3	0.00	FALSE
Pseudoalteromonas sp. 06-YPC22	*Pseudoalteromonas* sp. 06-YPC21	3.71	3.12	0.02	3	6.68	TRUE
Pseudoalteromonas sp. 06-YPC22	*Pseudoalteromonas* sp. 09-YP018	3.71	2.90	0.02	3	9.18	TRUE
Pseudoalteromonas sp. 06-YPC22	*Pseudoalteromonas* sp. 09-YPC25	3.71	2.80	0.02	3	10.29	TRUE
Pseudoalteromonas sp. 06-YPC22	*Pseudoalteromonas* sp. 09-YPC23	3.71	2.72	0.02	3	11.22	TRUE
Pseudoalteromonas sp. 06-YPC22	*Pseudoalteromonas* sp. 09-YPO19	3.71	2.87	0.02	3	9.55	TRUE
Pseudoalteromonas sp. 06-YPC22	*Pseudoalteromonas* sp. 10B-YPO11	3.71	3.33	0.02	3	4.36	TRUE
Pseudoalteromonas sp. 06-YPC22	*Pseudoalteromonas* sp. 09-YPC29	3.71	3.04	0.02	3	7.62	TRUE
Pseudoalteromonas sp. 06-YPC22	*Pseudoalteromonas* sp. 06-SWC23	3.71	2.43	0.02	3	14.41	TRUE
Pseudoalteromonas sp. 06-YPC22	*Pseudoalteromonas* sp. 02-YPC22	3.71	2.04	0.02	3	18.79	TRUE
Pseudoalteromonas sp. 06-YPC22	*Pseudoalteromonas* sp. 11-YP013	3.71	2.53	0.02	3	13.33	TRUE
Pseudoalteromonas sp. 06-YPC22	*Pseudoalteromonas* sp. 11-YPC25	3.71	1.82	0.02	3	21.36	TRUE
Pseudoalteromonas sp. 06-YPC22	*Pseudoalteromonas* sp. 09-YP001	3.71	3.18	0.02	3	6.04	TRUE
Pseudoalteromonas sp. 06-YPC22	*Pseudoalteromonas* sp. 11-YP016	3.71	2.13	0.02	3	17.78	TRUE
Pseudoalteromonas sp. 06-YPC22	*Bacillus* sp. 06-YP001	3.71	2.88	0.02	3	9.40	TRUE
Pseudoalteromonas sp. 06-YPC22	*Loktanella maritima* 06-YPC210	3.71	3.71	0.02	3	0.04	FALSE
Pseudoalteromonas sp. 06-YPC22	*Loktanella maritima* 06-YPC211	3.71	3.71	0.02	3	0.04	FALSE
Pseudoalteromonas sp. 06-YPC22	*Cobetia* sp. 10B-YPC21	3.71	3.50	0.02	3	2.44	FALSE
Pseudoalteromonas sp. 06-YPC22	*Altermonas* sp. 03-YPC23	3.71	3.18	0.02	3	6.04	TRUE
Pseudoalteromonas sp. 06-YPC22	*P. inhibens* S4	3.71	3.80	0.02	3	0.97	FALSE
Pseudoalteromonas sp. 06-YPC21	*Pseudoalteromonas* sp. 08-SWC22	3.12	3.58	0.02	3	5.14	TRUE
Pseudoalteromonas sp. 06-YPC21	*Pseudoalteromonas* sp. 08-YPC21	3.12	2.55	0.02	3	6.45	TRUE
Pseudoalteromonas sp. 06-YPC21	*Pseudoalteromonas* sp. 08-SWC21	3.12	2.18	0.02	3	10.57	TRUE
Pseudoalteromonas sp. 06-YPC21	*Pseudoalteromonas* sp. 03-YP014	3.12	3.25	0.02	3	1.42	FALSE
Pseudoalteromonas sp. 06-YPC21	*Pseudoalteromonas* sp. 02-YP012	3.12	3.17	0.02	3	0.57	FALSE
Pseudoalteromonas sp. 06-YPC21	*Pseudoalteromonas* sp. 06-YPC22	3.12	3.71	0.02	3	6.68	TRUE
Pseudoalteromonas sp. 06-YPC21	*Pseudoalteromonas* sp. 06-YPC21	3.12	3.12	0.02	3	0.00	FALSE
Pseudoalteromonas sp. 06-YPC21	*Pseudoalteromonas* sp. 09-YP018	3.12	2.90	0.02	3	2.50	FALSE
Pseudoalteromonas sp. 06-YPC21	*Pseudoalteromonas* sp. 09-YPC25	3.12	2.80	0.02	3	3.61	TRUE
Pseudoalteromonas sp. 06-YPC21	*Pseudoalteromonas* sp. 09-YPC23	3.12	2.72	0.02	3	4.54	TRUE
Pseudoalteromonas sp. 06-YPC21	*Pseudoalteromonas* sp. 09-YPO19	3.12	2.87	0.02	3	2.86	FALSE
Pseudoalteromonas sp. 06-YPC21	*Pseudoalteromonas* sp. 10B-YPO11	3.12	3.33	0.02	3	2.32	FALSE
Pseudoalteromonas sp. 06-YPC21	*Pseudoalteromonas* sp. 09-YPC29	3.12	3.04	0.02	3	0.94	FALSE
Pseudoalteromonas sp. 06-YPC21	*Pseudoalteromonas* sp. 06-SWC23	3.12	2.43	0.02	3	7.72	TRUE
Pseudoalteromonas sp. 06-YPC21	*Pseudoalteromonas* sp. 02-YPC22	3.12	2.04	0.02	3	12.11	TRUE
Pseudoalteromonas sp. 06-YPC21	*Pseudoalteromonas* sp. 11-YP013	3.12	2.53	0.02	3	6.64	TRUE
Pseudoalteromonas sp. 06-YPC21	*Pseudoalteromonas* sp. 11-YPC25	3.12	1.82	0.02	3	14.68	TRUE
Pseudoalteromonas sp. 06-YPC21	*Pseudoalteromonas* sp. 09-YP001	3.12	3.18	0.02	3	0.64	FALSE

Group 1 (M1)	Group 2 (M2)	M1	M2	MSw	N	Tukey 's HSD q[a]	Signifcance[b]
Pseudoalteromonas sp. 06-YPC21	*Pseudoalteromonas* sp. 11-YP016	3.12	2.13	0.02	3	11.10	TRUE
Pseudoalteromonas sp. 06-YPC21	*Bacillus* sp. 06-YP001	3.12	2.88	0.02	3	2.72	FALSE
Pseudoalteromonas sp. 06-YPC21	*Loktanella maritima* 06-YPC210	3.12	3.71	0.02	3	6.64	TRUE
Pseudoalteromonas sp. 06-YPC21	*Loktanella maritima* 06-YPC211	3.12	3.71	0.02	3	6.64	TRUE
Pseudoalteromonas sp. 06-YPC21	*Cobetia* sp. 10B-YPC21	3.12	3.50	0.02	3	4.24	TRUE
Pseudoalteromonas sp. 06-YPC21	*Altermonas* sp. 03-YPC23	3.12	3.18	0.02	3	0.64	FALSE
Pseudoalteromonas sp. 06-YPC21	*P. inhibens* S4	3.12	3.80	0.02	3	7.65	TRUE
Pseudoalteromonas sp. 09-YP018	*Pseudoalteromonas* sp. 08-SWC22	2.90	3.58	0.02	3	7.65	TRUE
Pseudoalteromonas sp. 09-YP018	*Pseudoalteromonas* sp. 08-YPC21	2.90	2.55	0.02	3	3.95	TRUE
Pseudoalteromonas sp. 09-YP018	*Pseudoalteromonas* sp. 08-SWC21	2.90	2.18	0.02	3	8.07	TRUE
Pseudoalteromonas sp. 09-YP018	*Pseudoalteromonas* sp. 03-YP014	2.90	3.25	0.02	3	3.93	TRUE
Pseudoalteromonas sp. 09-YP018	*Pseudoalteromonas* sp. 02-YP012	2.90	3.17	0.02	3	3.07	FALSE
Pseudoalteromonas sp. 09-YP018	*Pseudoalteromonas* sp. 06-YPC22	2.90	3.71	0.02	3	9.18	TRUE
Pseudoalteromonas sp. 09-YP018	*Pseudoalteromonas* sp. 06-YPC21	2.90	3.12	0.02	3	2.50	FALSE
Pseudoalteromonas sp. 09-YP018	*Pseudoalteromonas* sp. 09-YP018	2.90	2.90	0.02	3	0.00	FALSE
Pseudoalteromonas sp. 09-YP018	*Pseudoalteromonas* sp. 09-YPC25	2.90	2.80	0.02	3	1.11	FALSE
Pseudoalteromonas sp. 09-YP018	*Pseudoalteromonas* sp. 09-YPC23	2.90	2.72	0.02	3	2.04	FALSE
Pseudoalteromonas sp. 09-YP018	*Pseudoalteromonas* sp. 09-YPO19	2.90	2.87	0.02	3	0.36	FALSE
Pseudoalteromonas sp. 09-YP018	*Pseudoalteromonas* sp. 10B-YPO11	2.90	3.33	0.02	3	4.82	TRUE
Pseudoalteromonas sp. 09-YP018	*Pseudoalteromonas* sp. 09-YPC29	2.90	3.04	0.02	3	1.56	FALSE
Pseudoalteromonas sp. 09-YP018	*Pseudoalteromonas* sp. 06-SWC23	2.90	2.43	0.02	3	5.22	TRUE
Pseudoalteromonas sp. 09-YP018	*Pseudoalteromonas* sp. 02-YPC22	2.90	2.04	0.02	3	9.61	TRUE
Pseudoalteromonas sp. 09-YP018	*Pseudoalteromonas* sp. 11-YP013	2.90	2.53	0.02	3	4.14	TRUE
Pseudoalteromonas sp. 09-YP018	*Pseudoalteromonas* sp. 11-YPC25	2.90	1.82	0.02	3	12.18	TRUE
Pseudoalteromonas sp. 09-YP018	*Pseudoalteromonas* sp. 09-YP001	2.90	3.18	0.02	3	3.14	FALSE
Pseudoalteromonas sp. 09-YP018	*Pseudoalteromonas* sp. 11-YP016	2.90	2.13	0.02	3	8.60	TRUE
Pseudoalteromonas sp. 09-YP018	*Bacillus* sp. 06-YP001	2.90	2.88	0.02	3	0.22	FALSE
Pseudoalteromonas sp. 09-YP018	*Loktanella maritima* 06-YPC210	2.90	3.71	0.02	3	9.14	TRUE
Pseudoalteromonas sp. 09-YP018	*Loktanella maritima* 06-YPC211	2.90	3.71	0.02	3	9.14	TRUE
Pseudoalteromonas sp. 09-YP018	*Cobetia* sp. 10B-YPC21	2.90	3.50	0.02	3	6.74	TRUE
Pseudoalteromonas sp. 09-YP018	*Altermonas* sp. 03-YPC23	2.90	3.18	0.02	3	3.14	FALSE
Pseudoalteromonas sp. 09-YP018	*P. inhibens* S4	2.90	3.80	0.02	3	10.15	TRUE
Pseudoalteromonas sp. 09-YPC25	*Pseudoalteromonas* sp. 08-SWC22	2.80	3.58	0.02	3	8.76	TRUE
Pseudoalteromonas sp. 09-YPC25	*Pseudoalteromonas* sp. 08-YPC21	2.80	2.55	0.02	3	2.84	FALSE
Pseudoalteromonas sp. 09-YPC25	*Pseudoalteromonas* sp. 08-SWC21	2.80	2.18	0.02	3	6.96	TRUE
Pseudoalteromonas sp. 09-YPC25	*Pseudoalteromonas* sp. 03-YP014	2.80	3.25	0.02	3	5.04	TRUE
Pseudoalteromonas sp. 09-YPC25	*Pseudoalteromonas* sp. 02-YP012	2.80	3.17	0.02	3	4.18	TRUE
Pseudoalteromonas sp. 09-YPC25	*Pseudoalteromonas* sp. 06-YPC22	2.80	3.71	0.02	3	10.29	TRUE
Pseudoalteromonas sp. 09-YPC25	*Pseudoalteromonas* sp. 06-YPC21	2.80	3.12	0.02	3	3.61	TRUE
Pseudoalteromonas sp. 09-YPC25	*Pseudoalteromonas* sp. 09-YP018	2.80	2.90	0.02	3	1.11	FALSE
Pseudoalteromonas sp. 09-YPC25	*Pseudoalteromonas* sp. 09-YPC25	2.80	2.80	0.02	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPC25	*Pseudoalteromonas* sp. 09-YPC23	2.80	2.72	0.02	3	0.93	FALSE
Pseudoalteromonas sp. 09-YPC25	*Pseudoalteromonas* sp. 09-YPO19	2.80	2.87	0.02	3	0.75	FALSE

Group 1 (M1)	Group 2 (M2)	M1	M2	MSw	N	Tukey 's HSD q[a]	Signifcance[b]
Pseudoalteromonas sp. 09-YPC25	*Pseudoalteromonas* sp. 10B-YPO11	2.80	3.33	0.02	3	5.93	TRUE
Pseudoalteromonas sp. 09-YPC25	*Pseudoalteromonas* sp. 09-YPC29	2.80	3.04	0.02	3	2.67	FALSE
Pseudoalteromonas sp. 09-YPC25	*Pseudoalteromonas* sp. 06-SWC23	2.80	2.43	0.02	3	4.11	TRUE
Pseudoalteromonas sp. 09-YPC25	*Pseudoalteromonas* sp. 02-YPC22	2.80	2.04	0.02	3	8.50	TRUE
Pseudoalteromonas sp. 09-YPC25	*Pseudoalteromonas* sp. 11-YP013	2.80	2.53	0.02	3	3.03	FALSE
Pseudoalteromonas sp. 09-YPC25	*Pseudoalteromonas* sp. 11-YPC25	2.80	1.82	0.02	3	11.07	TRUE
Pseudoalteromonas sp. 09-YPC25	*Pseudoalteromonas* sp. 09-YP001	2.80	3.18	0.02	3	4.25	TRUE
Pseudoalteromonas sp. 09-YPC25	*Pseudoalteromonas* sp. 11-YP016	2.80	2.13	0.02	3	7.49	TRUE
Pseudoalteromonas sp. 09-YPC25	*Bacillus* sp. 06-YP001	2.80	2.88	0.02	3	0.89	FALSE
Pseudoalteromonas sp. 09-YPC25	*Loktanella maritima* 06-YPC210	2.80	3.71	0.02	3	10.25	TRUE
Pseudoalteromonas sp. 09-YPC25	*Loktanella maritima* 06-YPC211	2.80	3.71	0.02	3	10.25	TRUE
Pseudoalteromonas sp. 09-YPC25	*Cobetia* sp. 10B-YPC21	2.80	3.50	0.02	3	7.85	TRUE
Pseudoalteromonas sp. 09-YPC25	*Altermonas* sp. 03-YPC23	2.80	3.18	0.02	3	4.25	TRUE
Pseudoalteromonas sp. 09-YPC25	*P. inhibens* S4	2.80	3.80	0.02	3	11.26	TRUE
Pseudoalteromonas sp. 09-YPC23	*Pseudoalteromonas* sp. 08-SWC22	2.72	3.58	0.02	3	9.68	TRUE
Pseudoalteromonas sp. 09-YPC23	*Pseudoalteromonas* sp. 08-YPC21	2.72	2.55	0.02	3	1.92	FALSE
Pseudoalteromonas sp. 09-YPC23	*Pseudoalteromonas* sp. 08-SWC21	2.72	2.18	0.02	3	6.03	TRUE
Pseudoalteromonas sp. 09-YPC23	*Pseudoalteromonas* sp. 03-YP014	2.72	3.25	0.02	3	5.96	TRUE
Pseudoalteromonas sp. 09-YPC23	*Pseudoalteromonas* sp. 02-YP012	2.72	3.17	0.02	3	5.10	TRUE
Pseudoalteromonas sp. 09-YPC23	*Pseudoalteromonas* sp. 06-YPC22	2.72	3.71	0.02	3	11.22	TRUE
Pseudoalteromonas sp. 09-YPC23	*Pseudoalteromonas* sp. 06-YPC21	2.72	3.12	0.02	3	4.54	TRUE
Pseudoalteromonas sp. 09-YPC23	*Pseudoalteromonas* sp. 09-YP018	2.72	2.90	0.02	3	2.04	FALSE
Pseudoalteromonas sp. 09-YPC23	*Pseudoalteromonas* sp. 09-YPC25	2.72	2.80	0.02	3	0.93	FALSE
Pseudoalteromonas sp. 09-YPC23	*Pseudoalteromonas* sp. 09-YPC23	2.72	2.72	0.02	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPC23	*Pseudoalteromonas* sp. 09-YPO19	2.72	2.87	0.02	3	1.67	FALSE
Pseudoalteromonas sp. 09-YPC23	*Pseudoalteromonas* sp. 10B-YPO11	2.72	3.33	0.02	3	6.86	TRUE
Pseudoalteromonas sp. 09-YPC23	*Pseudoalteromonas* sp. 09-YPC29	2.72	3.04	0.02	3	3.60	TRUE
Pseudoalteromonas sp. 09-YPC23	*Pseudoalteromonas* sp. 06-SWC23	2.72	2.43	0.02	3	3.19	FALSE
Pseudoalteromonas sp. 09-YPC23	*Pseudoalteromonas* sp. 02-YPC22	2.72	2.04	0.02	3	7.57	TRUE
Pseudoalteromonas sp. 09-YPC23	*Pseudoalteromonas* sp. 11-YP013	2.72	2.53	0.02	3	2.11	FALSE
Pseudoalteromonas sp. 09-YPC23	*Pseudoalteromonas* sp. 11-YPC25	2.72	1.82	0.02	3	10.14	TRUE
Pseudoalteromonas sp. 09-YPC23	*Pseudoalteromonas* sp. 09-YP001	2.72	3.18	0.02	3	5.18	TRUE
Pseudoalteromonas sp. 09-YPC23	*Pseudoalteromonas* sp. 11-YP016	2.72	2.13	0.02	3	6.56	TRUE
Pseudoalteromonas sp. 09-YPC23	*Bacillus* sp. 06-YP001	2.72	2.88	0.02	3	1.82	FALSE
Pseudoalteromonas sp. 09-YPC23	*Loktanella maritima* 06-YPC210	2.72	3.71	0.02	3	11.17	TRUE
Pseudoalteromonas sp. 09-YPC23	*Loktanella maritima* 06-YPC211	2.72	3.71	0.02	3	11.17	TRUE
Pseudoalteromonas sp. 09-YPC23	*Cobetia* sp. 10B-YPC21	2.72	3.50	0.02	3	8.77	TRUE
Pseudoalteromonas sp. 09-YPC23	*Altermonas* sp. 03-YPC23	2.72	3.18	0.02	3	5.18	TRUE
Pseudoalteromonas sp. 09-YPC23	*P. inhibens* S4	2.72	3.80	0.02	3	12.19	TRUE
Pseudoalteromonas sp. 09-YPO19	*Pseudoalteromonas* sp. 08-SWC22	2.87	3.58	0.02	3	8.01	TRUE
Pseudoalteromonas sp. 09-YPO19	*Pseudoalteromonas* sp. 08-YPC21	2.87	2.55	0.02	3	3.59	TRUE
Pseudoalteromonas sp. 09-YPO19	*Pseudoalteromonas* sp. 08-SWC21	2.87	2.18	0.02	3	7.70	TRUE
Pseudoalteromonas sp. 09-YPO19	*Pseudoalteromonas* sp. 03-YP014	2.87	3.25	0.02	3	4.29	TRUE

Group 1 (M1)	Group 2 (M2)	M1	M2	MSw	N	Tukey 's HSD q[a]	Signifcance[b]
Pseudoalteromonas sp. 09-YPO19	*Pseudoalteromonas* sp. 02-YP012	2.87	3.17	0.02	3	3.43	FALSE
Pseudoalteromonas sp. 09-YPO19	*Pseudoalteromonas* sp. 06-YPC22	2.87	3.71	0.02	3	9.55	TRUE
Pseudoalteromonas sp. 09-YPO19	*Pseudoalteromonas* sp. 06-YPC21	2.87	3.12	0.02	3	2.86	FALSE
Pseudoalteromonas sp. 09-YPO19	*Pseudoalteromonas* sp. 09-YP018	2.87	2.90	0.02	3	0.36	FALSE
Pseudoalteromonas sp. 09-YPO19	*Pseudoalteromonas* sp. 09-YPC25	2.87	2.80	0.02	3	0.75	FALSE
Pseudoalteromonas sp. 09-YPO19	*Pseudoalteromonas* sp. 09-YPC23	2.87	2.72	0.02	3	1.67	FALSE
Pseudoalteromonas sp. 09-YPO19	*Pseudoalteromonas* sp. 09-YPO19	2.87	2.87	0.02	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPO19	*Pseudoalteromonas* sp. 10B-YPO11	2.87	3.33	0.02	3	5.19	TRUE
Pseudoalteromonas sp. 09-YPO19	*Pseudoalteromonas* sp. 09-YPC29	2.87	3.04	0.02	3	1.92	FALSE
Pseudoalteromonas sp. 09-YPO19	*Pseudoalteromonas* sp. 06-SWC23	2.87	2.43	0.02	3	4.86	TRUE
Pseudoalteromonas sp. 09-YPO19	*Pseudoalteromonas* sp. 02-YPC22	2.87	2.04	0.02	3	9.25	TRUE
Pseudoalteromonas sp. 09-YPO19	*Pseudoalteromonas* sp. 11-YP013	2.87	2.53	0.02	3	3.78	TRUE
Pseudoalteromonas sp. 09-YPO19	*Pseudoalteromonas* sp. 11-YPC25	2.87	1.82	0.02	3	11.81	TRUE
Pseudoalteromonas sp. 09-YPO19	*Pseudoalteromonas* sp. 09-YP001	2.87	3.18	0.02	3	3.51	FALSE
Pseudoalteromonas sp. 09-YPO19	*Pseudoalteromonas* sp. 11-YP016	2.87	2.13	0.02	3	8.23	TRUE
Pseudoalteromonas sp. 09-YPO19	*Bacillus* sp. 06-YP001	2.87	2.88	0.02	3	0.15	FALSE
Pseudoalteromonas sp. 09-YPO19	*Loktanella maritima* 06-YPC210	2.87	3.71	0.02	3	9.50	TRUE
Pseudoalteromonas sp. 09-YPO19	*Loktanella maritima* 06-YPC211	2.87	3.71	0.02	3	9.50	TRUE
Pseudoalteromonas sp. 09-YPO19	*Cobetia* sp. 10B-YPC21	2.87	3.50	0.02	3	7.10	TRUE
Pseudoalteromonas sp. 09-YPO19	*Altermonas* sp. 03-YPC23	2.87	3.18	0.02	3	3.51	FALSE
Pseudoalteromonas sp. 09-YPO19	*P. inhibens* S4	2.87	3.80	0.02	3	10.51	TRUE
Pseudoalteromonas sp. 10B-YPO11	*Pseudoalteromonas* sp. 08-SWC22	3.33	3.58	0.02	3	2.82	FALSE
Pseudoalteromonas sp. 10B-YPO11	*Pseudoalteromonas* sp. 08-YPC21	3.33	2.55	0.02	3	8.77	TRUE
Pseudoalteromonas sp. 10B-YPO11	*Pseudoalteromonas* sp. 08-SWC21	3.33	2.18	0.02	3	12.89	TRUE
Pseudoalteromonas sp. 10B-YPO11	*Pseudoalteromonas* sp. 03-YP014	3.33	3.25	0.02	3	0.90	FALSE
Pseudoalteromonas sp. 10B-YPO11	*Pseudoalteromonas* sp. 02-YP012	3.33	3.17	0.02	3	1.75	FALSE
Pseudoalteromonas sp. 10B-YPO11	*Pseudoalteromonas* sp. 06-YPC22	3.33	3.71	0.02	3	4.36	TRUE
Pseudoalteromonas sp. 10B-YPO11	*Pseudoalteromonas* sp. 06-YPC21	3.33	3.12	0.02	3	2.32	FALSE
Pseudoalteromonas sp. 10B-YPO11	*Pseudoalteromonas* sp. 09-YP018	3.33	2.90	0.02	3	4.82	TRUE
Pseudoalteromonas sp. 10B-YPO11	*Pseudoalteromonas* sp. 09-YPC25	3.33	2.80	0.02	3	5.93	TRUE
Pseudoalteromonas sp. 10B-YPO11	*Pseudoalteromonas* sp. 09-YPC23	3.33	2.72	0.02	3	6.86	TRUE
Pseudoalteromonas sp. 10B-YPO11	*Pseudoalteromonas* sp. 09-YPO19	3.33	2.87	0.02	3	5.19	TRUE
Pseudoalteromonas sp. 10B-YPO11	*Pseudoalteromonas* sp. 10B-YPO11	3.33	3.33	0.02	3	0.00	FALSE
Pseudoalteromonas sp. 10B-YPO11	*Pseudoalteromonas* sp. 09-YPC29	3.33	3.04	0.02	3	3.26	FALSE
Pseudoalteromonas sp. 10B-YPO11	*Pseudoalteromonas* sp. 06-SWC23	3.33	2.43	0.02	3	10.05	TRUE
Pseudoalteromonas sp. 10B-YPO11	*Pseudoalteromonas* sp. 02-YPC22	3.33	2.04	0.02	3	14.43	TRUE
Pseudoalteromonas sp. 10B-YPO11	*Pseudoalteromonas* sp. 11-YP013	3.33	2.53	0.02	3	8.97	TRUE
Pseudoalteromonas sp. 10B-YPO11	*Pseudoalteromonas* sp. 11-YPC25	3.33	1.82	0.02	3	17.00	TRUE
Pseudoalteromonas sp. 10B-YPO11	*Pseudoalteromonas* sp. 09-YP001	3.33	3.18	0.02	3	1.68	FALSE
Pseudoalteromonas sp. 10B-YPO11	*Pseudoalteromonas* sp. 11-YP016	3.33	2.13	0.02	3	13.42	TRUE
Pseudoalteromonas sp. 10B-YPO11	*Bacillus* sp. 06-YP001	3.33	2.88	0.02	3	5.04	TRUE
Pseudoalteromonas sp. 10B-YPO11	*Loktanella maritima* 06-YPC210	3.33	3.71	0.02	3	4.32	TRUE
Pseudoalteromonas sp. 10B-YPO11	*Loktanella maritima* 06-YPC211	3.33	3.71	0.02	3	4.32	TRUE

Group 1 (M1)	Group 2 (M2)	M1	M2	MSw	N	Tukey 's HSD q[a]	Signifcance[b]
Pseudoalteromonas sp. 10B-YPO11	*Cobetia* sp. 10B-YPC21	3.33	3.50	0.02	3	1.92	FALSE
Pseudoalteromonas sp. 10B-YPO11	*Altermonas* sp. 03-YPC23	3.33	3.18	0.02	3	1.68	FALSE
Pseudoalteromonas sp. 10B-YPO11	*P. inhibens* S4	3.33	3.80	0.02	3	5.33	TRUE
Pseudoalteromonas sp. 09-YPC29	*Pseudoalteromonas* sp. 08-SWC22	3.04	3.58	0.02	3	6.09	TRUE
Pseudoalteromonas sp. 09-YPC29	*Pseudoalteromonas* sp. 08-YPC21	3.04	2.55	0.02	3	5.51	TRUE
Pseudoalteromonas sp. 09-YPC29	*Pseudoalteromonas* sp. 08-SWC21	3.04	2.18	0.02	3	9.63	TRUE
Pseudoalteromonas sp. 09-YPC29	*Pseudoalteromonas* sp. 03-YP014	3.04	3.25	0.02	3	2.37	FALSE
Pseudoalteromonas sp. 09-YPC29	*Pseudoalteromonas* sp. 02-YP012	3.04	3.17	0.02	3	1.51	FALSE
Pseudoalteromonas sp. 09-YPC29	*Pseudoalteromonas* sp. 06-YPC22	3.04	3.71	0.02	3	7.62	TRUE
Pseudoalteromonas sp. 09-YPC29	*Pseudoalteromonas* sp. 06-YPC21	3.04	3.12	0.02	3	0.94	FALSE
Pseudoalteromonas sp. 09-YPC29	*Pseudoalteromonas* sp. 09-YP018	3.04	2.90	0.02	3	1.56	FALSE
Pseudoalteromonas sp. 09-YPC29	*Pseudoalteromonas* sp. 09-YPC25	3.04	2.80	0.02	3	2.67	FALSE
Pseudoalteromonas sp. 09-YPC29	*Pseudoalteromonas* sp. 09-YPC23	3.04	2.72	0.02	3	3.60	TRUE
Pseudoalteromonas sp. 09-YPC29	*Pseudoalteromonas* sp. 09-YPO19	3.04	2.87	0.02	3	1.92	FALSE
Pseudoalteromonas sp. 09-YPC29	*Pseudoalteromonas* sp. 10B-YPO11	3.04	3.33	0.02	3	3.26	FALSE
Pseudoalteromonas sp. 09-YPC29	*Pseudoalteromonas* sp. 09-YPC29	3.04	3.04	0.02	3	0.00	FALSE
Pseudoalteromonas sp. 09-YPC29	*Pseudoalteromonas* sp. 06-SWC23	3.04	2.43	0.02	3	6.78	TRUE
Pseudoalteromonas sp. 09-YPC29	*Pseudoalteromonas* sp. 02-YPC22	3.04	2.04	0.02	3	11.17	TRUE
Pseudoalteromonas sp. 09-YPC29	*Pseudoalteromonas* sp. 11-YP013	3.04	2.53	0.02	3	5.70	TRUE
Pseudoalteromonas sp. 09-YPC29	*Pseudoalteromonas* sp. 11-YPC25	3.04	1.82	0.02	3	13.74	TRUE
Pseudoalteromonas sp. 09-YPC29	*Pseudoalteromonas* sp. 09-YP001	3.04	3.18	0.02	3	1.58	FALSE
Pseudoalteromonas sp. 09-YPC29	*Pseudoalteromonas* sp. 11-YP016	3.04	2.13	0.02	3	10.16	TRUE
Pseudoalteromonas sp. 09-YPC29	*Bacillus* sp. 06-YP001	3.04	2.88	0.02	3	1.78	FALSE
Pseudoalteromonas sp. 09-YPC29	*Loktanella maritima* 06-YPC210	3.04	3.71	0.02	3	7.58	TRUE
Pseudoalteromonas sp. 09-YPC29	*Loktanella maritima* 06-YPC211	3.04	3.71	0.02	3	7.58	TRUE
Pseudoalteromonas sp. 09-YPC29	*Cobetia* sp. 10B-YPC21	3.04	3.50	0.02	3	5.18	TRUE
Pseudoalteromonas sp. 09-YPC29	*Altermonas* sp. 03-YPC23	3.04	3.18	0.02	3	1.58	FALSE
Pseudoalteromonas sp. 09-YPC29	*P. inhibens* S4	3.04	3.80	0.02	3	8.59	TRUE
Pseudoalteromonas sp. 06-SWC23	*Pseudoalteromonas* sp. 08-SWC22	2.43	3.58	0.02	3	12.87	TRUE
Pseudoalteromonas sp. 06-SWC23	*Pseudoalteromonas* sp. 08-YPC21	2.43	2.55	0.02	3	1.27	FALSE
Pseudoalteromonas sp. 06-SWC23	*Pseudoalteromonas* sp. 08-SWC21	2.43	2.18	0.02	3	2.84	FALSE
Pseudoalteromonas sp. 06-SWC23	*Pseudoalteromonas* sp. 03-YP014	2.43	3.25	0.02	3	9.15	TRUE
Pseudoalteromonas sp. 06-SWC23	*Pseudoalteromonas* sp. 02-YP012	2.43	3.17	0.02	3	8.29	TRUE
Pseudoalteromonas sp. 06-SWC23	*Pseudoalteromonas* sp. 06-YPC22	2.43	3.71	0.02	3	14.41	TRUE
Pseudoalteromonas sp. 06-SWC23	*Pseudoalteromonas* sp. 06-YPC21	2.43	3.12	0.02	3	7.72	TRUE
Pseudoalteromonas sp. 06-SWC23	*Pseudoalteromonas* sp. 09-YP018	2.43	2.90	0.02	3	5.22	TRUE
Pseudoalteromonas sp. 06-SWC23	*Pseudoalteromonas* sp. 09-YPC25	2.43	2.80	0.02	3	4.11	TRUE
Pseudoalteromonas sp. 06-SWC23	*Pseudoalteromonas* sp. 09-YPC23	2.43	2.72	0.02	3	3.19	FALSE
Pseudoalteromonas sp. 06-SWC23	*Pseudoalteromonas* sp. 09-YPO19	2.43	2.87	0.02	3	4.86	TRUE
Pseudoalteromonas sp. 06-SWC23	*Pseudoalteromonas* sp. 10B-YPO11	2.43	3.33	0.02	3	10.05	TRUE
Pseudoalteromonas sp. 06-SWC23	*Pseudoalteromonas* sp. 09-YPC29	2.43	3.04	0.02	3	6.78	TRUE
Pseudoalteromonas sp. 06-SWC23	*Pseudoalteromonas* sp. 06-SWC23	2.43	2.43	0.02	3	0.00	FALSE
Pseudoalteromonas sp. 06-SWC23	*Pseudoalteromonas* sp. 02-YPC22	2.43	2.04	0.02	3	4.39	TRUE

Group 1 (M1)	Group 2 (M2)	M1	M2	MSw	N	Tukey 's HSD q[a]	Signifcance[b]
Pseudoalteromonas sp. 06-SWC23	*Pseudoalteromonas* sp. 11-YP013	2.43	2.53	0.02	3	1.08	FALSE
Pseudoalteromonas sp. 06-SWC23	*Pseudoalteromonas* sp. 11-YPC25	2.43	1.82	0.02	3	6.95	TRUE
Pseudoalteromonas sp. 06-SWC23	*Pseudoalteromonas* sp. 09-YP001	2.43	3.18	0.02	3	8.37	TRUE
Pseudoalteromonas sp. 06-SWC23	*Pseudoalteromonas* sp. 11-YP016	2.43	2.13	0.02	3	3.37	FALSE
Pseudoalteromonas sp. 06-SWC23	*Bacillus* sp. 06-YP001	2.43	2.88	0.02	3	5.01	TRUE
Pseudoalteromonas sp. 06-SWC23	*Loktanella maritima* 06-YPC210	2.43	3.71	0.02	3	14.36	TRUE
Pseudoalteromonas sp. 06-SWC23	*Loktanella maritima* 06-YPC211	2.43	3.71	0.02	3	14.36	TRUE
Pseudoalteromonas sp. 06-SWC23	*Cobetia* sp. 10B-YPC21	2.43	3.50	0.02	3	11.96	TRUE
Pseudoalteromonas sp. 06-SWC23	*Altermonas* sp. 03-YPC23	2.43	3.18	0.02	3	8.37	TRUE
Pseudoalteromonas sp. 06-SWC23	*P. inhibens* S4	2.43	3.80	0.02	3	15.37	TRUE
Pseudoalteromonas sp. 02-YPC22	*Pseudoalteromonas* sp. 08-SWC22	2.04	3.58	0.02	3	17.26	TRUE
Pseudoalteromonas sp. 02-YPC22	*Pseudoalteromonas* sp. 08-YPC21	2.04	2.55	0.02	3	5.66	TRUE
Pseudoalteromonas sp. 02-YPC22	*Pseudoalteromonas* sp. 08-SWC21	2.04	2.18	0.02	3	1.54	FALSE
Pseudoalteromonas sp. 02-YPC22	*Pseudoalteromonas* sp. 03-YP014	2.04	3.25	0.02	3	13.54	TRUE
Pseudoalteromonas sp. 02-YPC22	*Pseudoalteromonas* sp. 02-YP012	2.04	3.17	0.02	3	12.68	TRUE
Pseudoalteromonas sp. 02-YPC22	*Pseudoalteromonas* sp. 06-YPC22	2.04	3.71	0.02	3	18.79	TRUE
Pseudoalteromonas sp. 02-YPC22	*Pseudoalteromonas* sp. 06-YPC21	2.04	3.12	0.02	3	12.11	TRUE
Pseudoalteromonas sp. 02-YPC22	*Pseudoalteromonas* sp. 09-YP018	2.04	2.90	0.02	3	9.61	TRUE
Pseudoalteromonas sp. 02-YPC22	*Pseudoalteromonas* sp. 09-YPC25	2.04	2.80	0.02	3	8.50	TRUE
Pseudoalteromonas sp. 02-YPC22	*Pseudoalteromonas* sp. 09-YPC23	2.04	2.72	0.02	3	7.57	TRUE
Pseudoalteromonas sp. 02-YPC22	*Pseudoalteromonas* sp. 09-YPO19	2.04	2.87	0.02	3	9.25	TRUE
Pseudoalteromonas sp. 02-YPC22	*Pseudoalteromonas* sp. 10B-YPO11	2.04	3.33	0.02	3	14.43	TRUE
Pseudoalteromonas sp. 02-YPC22	*Pseudoalteromonas* sp. 09-YPC29	2.04	3.04	0.02	3	11.17	TRUE
Pseudoalteromonas sp. 02-YPC22	*Pseudoalteromonas* sp. 06-SWC23	2.04	2.43	0.02	3	4.39	TRUE
Pseudoalteromonas sp. 02-YPC22	*Pseudoalteromonas* sp. 02-YPC22	2.04	2.04	0.02	3	0.00	FALSE
Pseudoalteromonas sp. 02-YPC22	*Pseudoalteromonas* sp. 11-YP013	2.04	2.53	0.02	3	5.47	TRUE
Pseudoalteromonas sp. 02-YPC22	*Pseudoalteromonas* sp. 11-YPC25	2.04	1.82	0.02	3	2.56	FALSE
Pseudoalteromonas sp. 02-YPC22	*Pseudoalteromonas* sp. 09-YP001	2.04	3.18	0.02	3	12.75	TRUE
Pseudoalteromonas sp. 02-YPC22	*Pseudoalteromonas* sp. 11-YP016	2.04	2.13	0.02	3	1.01	FALSE
Pseudoalteromonas sp. 02-YPC22	*Bacillus* sp. 06-YP001	2.04	2.88	0.02	3	9.39	TRUE
Pseudoalteromonas sp. 02-YPC22	*Loktanella maritima* 06-YPC210	2.04	3.71	0.02	3	18.75	TRUE
Pseudoalteromonas sp. 02-YPC22	*Loktanella maritima* 06-YPC211	2.04	3.71	0.02	3	18.75	TRUE
Pseudoalteromonas sp. 02-YPC22	*Cobetia* sp. 10B-YPC21	2.04	3.50	0.02	3	16.35	TRUE
Pseudoalteromonas sp. 02-YPC22	*Altermonas* sp. 03-YPC23	2.04	3.18	0.02	3	12.75	TRUE
Pseudoalteromonas sp. 02-YPC22	*P. inhibens* S4	2.04	3.80	0.02	3	19.76	TRUE
Pseudoalteromonas sp. 11-YP013	*Pseudoalteromonas* sp. 08-SWC22	2.53	3.58	0.02	3	11.79	TRUE
Pseudoalteromonas sp. 11-YP013	*Pseudoalteromonas* sp. 08-YPC21	2.53	2.55	0.02	3	0.19	FALSE
Pseudoalteromonas sp. 11-YP013	*Pseudoalteromonas* sp. 08-SWC21	2.53	2.18	0.02	3	3.92	TRUE
Pseudoalteromonas sp. 11-YP013	*Pseudoalteromonas* sp. 03-YP014	2.53	3.25	0.02	3	8.07	TRUE
Pseudoalteromonas sp. 11-YP013	*Pseudoalteromonas* sp. 02-YP012	2.53	3.17	0.02	3	7.21	TRUE
Pseudoalteromonas sp. 11-YP013	*Pseudoalteromonas* sp. 06-YPC22	2.53	3.71	0.02	3	13.33	TRUE
Pseudoalteromonas sp. 11-YP013	*Pseudoalteromonas* sp. 06-YPC21	2.53	3.12	0.02	3	6.64	TRUE
Pseudoalteromonas sp. 11-YP013	*Pseudoalteromonas* sp. 09-YP018	2.53	2.90	0.02	3	4.14	TRUE

Group 1 (M1)	Group 2 (M2)	M1	M2	MSw	N	Tukey 's HSD q[a]	Signifcance[b]
Pseudoalteromonas sp. 11-YP013	*Pseudoalteromonas* sp. 09-YPC25	2.53	2.80	0.02	3	3.03	FALSE
Pseudoalteromonas sp. 11-YP013	*Pseudoalteromonas* sp. 09-YPC23	2.53	2.72	0.02	3	2.11	FALSE
Pseudoalteromonas sp. 11-YP013	*Pseudoalteromonas* sp. 09-YPO19	2.53	2.87	0.02	3	3.78	TRUE
Pseudoalteromonas sp. 11-YP013	*Pseudoalteromonas* sp. 10B-YPO11	2.53	3.33	0.02	3	8.97	TRUE
Pseudoalteromonas sp. 11-YP013	*Pseudoalteromonas* sp. 09-YPC29	2.53	3.04	0.02	3	5.70	TRUE
Pseudoalteromonas sp. 11-YP013	*Pseudoalteromonas* sp. 06-SWC23	2.53	2.43	0.02	3	1.08	FALSE
Pseudoalteromonas sp. 11-YP013	*Pseudoalteromonas* sp. 02-YPC22	2.53	2.04	0.02	3	5.47	TRUE
Pseudoalteromonas sp. 11-YP013	*Pseudoalteromonas* sp. 11-YP013	2.53	2.53	0.02	3	0.00	FALSE
Pseudoalteromonas sp. 11-YP013	*Pseudoalteromonas* sp. 11-YPC25	2.53	1.82	0.02	3	8.03	TRUE
Pseudoalteromonas sp. 11-YP013	*Pseudoalteromonas* sp. 09-YP001	2.53	3.18	0.02	3	7.29	TRUE
Pseudoalteromonas sp. 11-YP013	*Pseudoalteromonas* sp. 11-YP016	2.53	2.13	0.02	3	4.45	TRUE
Pseudoalteromonas sp. 11-YP013	*Bacillus* sp. 06-YP001	2.53	2.88	0.02	3	3.93	TRUE
Pseudoalteromonas sp. 11-YP013	*Loktanella maritima* 06-YPC210	2.53	3.71	0.02	3	13.28	TRUE
Pseudoalteromonas sp. 11-YP013	*Loktanella maritima* 06-YPC211	2.53	3.71	0.02	3	13.28	TRUE
Pseudoalteromonas sp. 11-YP013	*Cobetia* sp. 10B-YPC21	2.53	3.50	0.02	3	10.88	TRUE
Pseudoalteromonas sp. 11-YP013	*Altermonas* sp. 03-YPC23	2.53	3.18	0.02	3	7.29	TRUE
Pseudoalteromonas sp. 11-YP013	*P. inhibens* S4	2.53	3.80	0.02	3	14.29	TRUE
Pseudoalteromonas sp. 11-YPC25	*Pseudoalteromonas* sp. 08-SWC22	1.82	3.58	0.02	3	19.82	TRUE
Pseudoalteromonas sp. 11-YPC25	*Pseudoalteromonas* sp. 08-YPC21	1.82	2.55	0.02	3	8.22	TRUE
Pseudoalteromonas sp. 11-YPC25	*Pseudoalteromonas* sp. 08-SWC21	1.82	2.18	0.02	3	4.11	TRUE
Pseudoalteromonas sp. 11-YPC25	*Pseudoalteromonas* sp. 03-YP014	1.82	3.25	0.02	3	16.10	TRUE
Pseudoalteromonas sp. 11-YPC25	*Pseudoalteromonas* sp. 02-YP012	1.82	3.17	0.02	3	15.24	TRUE
Pseudoalteromonas sp. 11-YPC25	*Pseudoalteromonas* sp. 06-YPC22	1.82	3.71	0.02	3	21.36	TRUE
Pseudoalteromonas sp. 11-YPC25	*Pseudoalteromonas* sp. 06-YPC21	1.82	3.12	0.02	3	14.68	TRUE
Pseudoalteromonas sp. 11-YPC25	*Pseudoalteromonas* sp. 09-YP018	1.82	2.90	0.02	3	12.18	TRUE
Pseudoalteromonas sp. 11-YPC25	*Pseudoalteromonas* sp. 09-YPC25	1.82	2.80	0.02	3	11.07	TRUE
Pseudoalteromonas sp. 11-YPC25	*Pseudoalteromonas* sp. 09-YPC23	1.82	2.72	0.02	3	10.14	TRUE
Pseudoalteromonas sp. 11-YPC25	*Pseudoalteromonas* sp. 09-YPO19	1.82	2.87	0.02	3	11.81	TRUE
Pseudoalteromonas sp. 11-YPC25	*Pseudoalteromonas* sp. 10B-YPO11	1.82	3.33	0.02	3	17.00	TRUE
Pseudoalteromonas sp. 11-YPC25	*Pseudoalteromonas* sp. 09-YPC29	1.82	3.04	0.02	3	13.74	TRUE
Pseudoalteromonas sp. 11-YPC25	*Pseudoalteromonas* sp. 06-SWC23	1.82	2.43	0.02	3	6.95	TRUE
Pseudoalteromonas sp. 11-YPC25	*Pseudoalteromonas* sp. 02-YPC22	1.82	2.04	0.02	3	2.56	FALSE
Pseudoalteromonas sp. 11-YPC25	*Pseudoalteromonas* sp. 11-YP013	1.82	2.53	0.02	3	8.03	TRUE
Pseudoalteromonas sp. 11-YPC25	*Pseudoalteromonas* sp. 11-YPC25	1.82	1.82	0.02	3	0.00	FALSE
Pseudoalteromonas sp. 11-YPC25	*Pseudoalteromonas* sp. 09-YP001	1.82	3.18	0.02	3	15.32	TRUE
Pseudoalteromonas sp. 11-YPC25	*Pseudoalteromonas* sp. 11-YP016	1.82	2.13	0.02	3	3.58	TRUE
Pseudoalteromonas sp. 11-YPC25	*Bacillus* sp. 06-YP001	1.82	2.88	0.02	3	11.96	TRUE
Pseudoalteromonas sp. 11-YPC25	*Loktanella maritima* 06-YPC210	1.82	3.71	0.02	3	21.31	TRUE
Pseudoalteromonas sp. 11-YPC25	*Loktanella maritima* 06-YPC211	1.82	3.71	0.02	3	21.31	TRUE
Pseudoalteromonas sp. 11-YPC25	*Cobetia* sp. 10B-YPC21	1.82	3.50	0.02	3	18.91	TRUE
Pseudoalteromonas sp. 11-YPC25	*Altermonas* sp. 03-YPC23	1.82	3.18	0.02	3	15.32	TRUE
Pseudoalteromonas sp. 11-YPC25	*P. inhibens* S4	1.82	3.80	0.02	3	22.33	TRUE
Pseudoalteromonas sp. 09-YP001	*Pseudoalteromonas* sp. 08-SWC22	3.18	3.58	0.02	3	4.50	TRUE

Group 1 (M1)	Group 2 (M2)	M1	M2	MSw	N	Tukey 's HSD q[a]	Signifcance[b]
Pseudoalteromonas sp. 09-YP001	*Pseudoalteromonas* sp. 08-YPC21	3.18	2.55	0.02	3	7.09	TRUE
Pseudoalteromonas sp. 09-YP001	*Pseudoalteromonas* sp. 08-SWC21	3.18	2.18	0.02	3	11.21	TRUE
Pseudoalteromonas sp. 09-YP001	*Pseudoalteromonas* sp. 03-YP014	3.18	3.25	0.02	3	0.78	FALSE
Pseudoalteromonas sp. 09-YP001	*Pseudoalteromonas* sp. 02-YP012	3.18	3.17	0.02	3	0.07	FALSE
Pseudoalteromonas sp. 09-YP001	*Pseudoalteromonas* sp. 06-YPC22	3.18	3.71	0.02	3	6.04	TRUE
Pseudoalteromonas sp. 09-YP001	*Pseudoalteromonas* sp. 06-YPC21	3.18	3.12	0.02	3	0.64	FALSE
Pseudoalteromonas sp. 09-YP001	*Pseudoalteromonas* sp. 09-YP018	3.18	2.90	0.02	3	3.14	FALSE
Pseudoalteromonas sp. 09-YP001	*Pseudoalteromonas* sp. 09-YPC25	3.18	2.80	0.02	3	4.25	TRUE
Pseudoalteromonas sp. 09-YP001	*Pseudoalteromonas* sp. 09-YPC23	3.18	2.72	0.02	3	5.18	TRUE
Pseudoalteromonas sp. 09-YP001	*Pseudoalteromonas* sp. 09-YPO19	3.18	2.87	0.02	3	3.51	FALSE
Pseudoalteromonas sp. 09-YP001	*Pseudoalteromonas* sp. 10B-YPO11	3.18	3.33	0.02	3	1.68	FALSE
Pseudoalteromonas sp. 09-YP001	*Pseudoalteromonas* sp. 09-YPC29	3.18	3.04	0.02	3	1.58	FALSE
Pseudoalteromonas sp. 09-YP001	*Pseudoalteromonas* sp. 06-SWC23	3.18	2.43	0.02	3	8.37	TRUE
Pseudoalteromonas sp. 09-YP001	*Pseudoalteromonas* sp. 02-YPC22	3.18	2.04	0.02	3	12.75	TRUE
Pseudoalteromonas sp. 09-YP001	*Pseudoalteromonas* sp. 11-YP013	3.18	2.53	0.02	3	7.29	TRUE
Pseudoalteromonas sp. 09-YP001	*Pseudoalteromonas* sp. 11-YPC25	3.18	1.82	0.02	3	15.32	TRUE
Pseudoalteromonas sp. 09-YP001	*Pseudoalteromonas* sp. 09-YP001	3.18	3.18	0.02	3	0.00	FALSE
Pseudoalteromonas sp. 09-YP001	*Pseudoalteromonas* sp. 11-YP016	3.18	2.13	0.02	3	11.74	TRUE
Pseudoalteromonas sp. 09-YP001	*Bacillus* sp. 06-YP001	3.18	2.88	0.02	3	3.36	FALSE
Pseudoalteromonas sp. 09-YP001	*Loktanella maritima* 06-YPC210	3.18	3.71	0.02	3	6.00	TRUE
Pseudoalteromonas sp. 09-YP001	*Loktanella maritima* 06-YPC211	3.18	3.71	0.02	3	6.00	TRUE
Pseudoalteromonas sp. 09-YP001	*Cobetia* sp. 10B-YPC21	3.18	3.50	0.02	3	3.60	TRUE
Pseudoalteromonas sp. 09-YP001	*Altermonas* sp. 03-YPC23	3.18	3.18	0.02	3	0.00	FALSE
Pseudoalteromonas sp. 09-YP001	*P. inhibens* S4	3.18	3.80	0.02	3	7.01	TRUE
Pseudoalteromonas sp. 11-YP016	*Pseudoalteromonas* sp. 08-SWC22	2.13	3.58	0.02	3	16.24	TRUE
Pseudoalteromonas sp. 11-YP016	*Pseudoalteromonas* sp. 08-YPC21	2.13	2.55	0.02	3	4.65	TRUE
Pseudoalteromonas sp. 11-YP016	*Pseudoalteromonas* sp. 08-SWC21	2.13	2.18	0.02	3	0.53	FALSE
Pseudoalteromonas sp. 11-YP016	*Pseudoalteromonas* sp. 03-YP014	2.13	3.25	0.02	3	12.52	TRUE
Pseudoalteromonas sp. 11-YP016	*Pseudoalteromonas* sp. 02-YP012	2.13	3.17	0.02	3	11.67	TRUE
Pseudoalteromonas sp. 11-YP016	*Pseudoalteromonas* sp. 06-YPC22	2.13	3.71	0.02	3	17.78	TRUE
Pseudoalteromonas sp. 11-YP016	*Pseudoalteromonas* sp. 06-YPC21	2.13	3.12	0.02	3	11.10	TRUE
Pseudoalteromonas sp. 11-YP016	*Pseudoalteromonas* sp. 09-YP018	2.13	2.90	0.02	3	8.60	TRUE
Pseudoalteromonas sp. 11-YP016	*Pseudoalteromonas* sp. 09-YPC25	2.13	2.80	0.02	3	7.49	TRUE
Pseudoalteromonas sp. 11-YP016	*Pseudoalteromonas* sp. 09-YPC23	2.13	2.72	0.02	3	6.56	TRUE
Pseudoalteromonas sp. 11-YP016	*Pseudoalteromonas* sp. 09-YPO19	2.13	2.87	0.02	3	8.23	TRUE
Pseudoalteromonas sp. 11-YP016	*Pseudoalteromonas* sp. 10B-YPO11	2.13	3.33	0.02	3	13.42	TRUE
Pseudoalteromonas sp. 11-YP016	*Pseudoalteromonas* sp. 09-YPC29	2.13	3.04	0.02	3	10.16	TRUE
Pseudoalteromonas sp. 11-YP016	*Pseudoalteromonas* sp. 06-SWC23	2.13	2.43	0.02	3	3.37	FALSE
Pseudoalteromonas sp. 11-YP016	*Pseudoalteromonas* sp. 02-YPC22	2.13	2.04	0.02	3	1.01	FALSE
Pseudoalteromonas sp. 11-YP016	*Pseudoalteromonas* sp. 11-YP013	2.13	2.53	0.02	3	4.45	TRUE
Pseudoalteromonas sp. 11-YP016	*Pseudoalteromonas* sp. 11-YPC25	2.13	1.82	0.02	3	3.58	TRUE
Pseudoalteromonas sp. 11-YP016	*Pseudoalteromonas* sp. 09-YP001	2.13	3.18	0.02	3	11.74	TRUE
Pseudoalteromonas sp. 11-YP016	*Pseudoalteromonas* sp. 11-YP016	2.13	2.13	0.02	3	0.00	FALSE

Group 1 (M1)	Group 2 (M2)	M1	M2	MSw	N	Tukey 's HSD q[a]	Signifcance[b]
Pseudoalteromonas sp. 11-YP016	*Bacillus* sp. 06-YP001	2.13	2.88	0.02	3	8.38	TRUE
Pseudoalteromonas sp. 11-YP016	*Loktanella maritima* 06-YPC210	2.13	3.71	0.02	3	17.74	TRUE
Pseudoalteromonas sp. 11-YP016	*Loktanella maritima* 06-YPC211	2.13	3.71	0.02	3	17.74	TRUE
Pseudoalteromonas sp. 11-YP016	*Cobetia* sp. 10B-YPC21	2.13	3.50	0.02	3	15.34	TRUE
Pseudoalteromonas sp. 11-YP016	*Altermonas* sp. 03-YPC23	2.13	3.18	0.02	3	11.74	TRUE
Pseudoalteromonas sp. 11-YP016	*P. inhibens* S4	2.13	3.80	0.02	3	18.75	TRUE
Bacillus sp. 06-YP001	*Pseudoalteromonas* sp. 08-SWC22	2.88	3.58	0.02	3	7.86	TRUE
Bacillus sp. 06-YP001	*Pseudoalteromonas* sp. 08-YPC21	2.88	2.55	0.02	3	3.73	TRUE
Bacillus sp. 06-YP001	*Pseudoalteromonas* sp. 08-SWC21	2.88	2.18	0.02	3	7.85	TRUE
Bacillus sp. 06-YP001	*Pseudoalteromonas* sp. 03-YP014	2.88	3.25	0.02	3	4.14	TRUE
Bacillus sp. 06-YP001	*Pseudoalteromonas* sp. 02-YP012	2.88	3.17	0.02	3	3.28	FALSE
Bacillus sp. 06-YP001	*Pseudoalteromonas* sp. 06-YPC22	2.88	3.71	0.02	3	9.40	TRUE
Bacillus sp. 06-YP001	*Pseudoalteromonas* sp. 06-YPC21	2.88	3.12	0.02	3	2.72	FALSE
Bacillus sp. 06-YP001	*Pseudoalteromonas* sp. 09-YP018	2.88	2.90	0.02	3	0.22	FALSE
Bacillus sp. 06-YP001	*Pseudoalteromonas* sp. 09-YPC25	2.88	2.80	0.02	3	0.89	FALSE
Bacillus sp. 06-YP001	*Pseudoalteromonas* sp. 09-YPC23	2.88	2.72	0.02	3	1.82	FALSE
Bacillus sp. 06-YP001	*Pseudoalteromonas* sp. 09-YPO19	2.88	2.87	0.02	3	0.15	FALSE
Bacillus sp. 06-YP001	*Pseudoalteromonas* sp. 10B-YPO11	2.88	3.33	0.02	3	5.04	TRUE
Bacillus sp. 06-YP001	*Pseudoalteromonas* sp. 09-YPC29	2.88	3.04	0.02	3	1.78	FALSE
Bacillus sp. 06-YP001	*Pseudoalteromonas* sp. 06-SWC23	2.88	2.43	0.02	3	5.01	TRUE
Bacillus sp. 06-YP001	*Pseudoalteromonas* sp. 02-YPC22	2.88	2.04	0.02	3	9.39	TRUE
Bacillus sp. 06-YP001	*Pseudoalteromonas* sp. 11-YP013	2.88	2.53	0.02	3	3.93	TRUE
Bacillus sp. 06-YP001	*Pseudoalteromonas* sp. 11-YPC25	2.88	1.82	0.02	3	11.96	TRUE
Bacillus sp. 06-YP001	*Pseudoalteromonas* sp. 09-YP001	2.88	3.18	0.02	3	3.36	FALSE
Bacillus sp. 06-YP001	*Pseudoalteromonas* sp. 11-YP016	2.88	2.13	0.02	3	8.38	TRUE
Bacillus sp. 06-YP001	*Bacillus* sp. 06-YP001	2.88	2.88	0.02	3	0.00	FALSE
Bacillus sp. 06-YP001	*Loktanella maritima* 06-YPC210	2.88	3.71	0.02	3	9.36	TRUE
Bacillus sp. 06-YP001	*Loktanella maritima* 06-YPC211	2.88	3.71	0.02	3	9.36	TRUE
Bacillus sp. 06-YP001	*Cobetia* sp. 10B-YPC21	2.88	3.50	0.02	3	6.96	TRUE
Bacillus sp. 06-YP001	*Altermonas* sp. 03-YPC23	2.88	3.18	0.02	3	3.36	FALSE
Bacillus sp. 06-YP001	*P. inhibens* S4	2.88	3.80	0.02	3	10.37	TRUE
Loktanella maritima 06-YPC210	*Pseudoalteromonas* sp. 08-SWC22	3.71	3.58	0.02	3	1.49	FALSE
Loktanella maritima 06-YPC210	*Pseudoalteromonas* sp. 08-YPC21	3.71	2.55	0.02	3	13.09	TRUE
Loktanella maritima 06-YPC210	*Pseudoalteromonas* sp. 08-SWC21	3.71	2.18	0.02	3	17.20	TRUE
Loktanella maritima 06-YPC210	*Pseudoalteromonas* sp. 03-YP014	3.71	3.25	0.02	3	5.21	TRUE
Loktanella maritima 06-YPC210	*Pseudoalteromonas* sp. 02-YP012	3.71	3.17	0.02	3	6.07	TRUE
Loktanella maritima 06-YPC210	*Pseudoalteromonas* sp. 06-YPC22	3.71	3.71	0.02	3	0.04	FALSE
Loktanella maritima 06-YPC210	*Pseudoalteromonas* sp. 06-YPC21	3.71	3.12	0.02	3	6.64	TRUE
Loktanella maritima 06-YPC210	*Pseudoalteromonas* sp. 09-YP018	3.71	2.90	0.02	3	9.14	TRUE
Loktanella maritima 06-YPC210	*Pseudoalteromonas* sp. 09-YPC25	3.71	2.80	0.02	3	10.25	TRUE
Loktanella maritima 06-YPC210	*Pseudoalteromonas* sp. 09-YPC23	3.71	2.72	0.02	3	11.17	TRUE
Loktanella maritima 06-YPC210	*Pseudoalteromonas* sp. 09-YPO19	3.71	2.87	0.02	3	9.50	TRUE
Loktanella maritima 06-YPC210	*Pseudoalteromonas* sp. 10B-YPO11	3.71	3.33	0.02	3	4.32	TRUE

Group 1 (M1)	Group 2 (M2)	M1	M2	MSw	N	Tukey 's HSD q[a]	Signifcance[b]
Loktanella maritima 06-YPC210	*Pseudoalteromonas* sp. 09-YPC29	3.71	3.04	0.02	3	7.58	TRUE
Loktanella maritima 06-YPC210	*Pseudoalteromonas* sp. 06-SWC23	3.71	2.43	0.02	3	14.36	TRUE
Loktanella maritima 06-YPC210	*Pseudoalteromonas* sp. 02-YPC22	3.71	2.04	0.02	3	18.75	TRUE
Loktanella maritima 06-YPC210	*Pseudoalteromonas* sp. 11-YP013	3.71	2.53	0.02	3	13.28	TRUE
Loktanella maritima 06-YPC210	*Pseudoalteromonas* sp. 11-YPC25	3.71	1.82	0.02	3	21.31	TRUE
Loktanella maritima 06-YPC210	*Pseudoalteromonas* sp. 09-YP001	3.71	3.18	0.02	3	6.00	TRUE
Loktanella maritima 06-YPC210	*Pseudoalteromonas* sp. 11-YP016	3.71	2.13	0.02	3	17.74	TRUE
Loktanella maritima 06-YPC210	*Bacillus* sp. 06-YP001	3.71	2.88	0.02	3	9.36	TRUE
Loktanella maritima 06-YPC210	*Loktanella maritima* 06-YPC210	3.71	3.71	0.02	3	0.00	FALSE
Loktanella maritima 06-YPC210	*Loktanella maritima* 06-YPC211	3.71	3.71	0.02	3	0.00	FALSE
Loktanella maritima 06-YPC210	*Cobetia* sp. 10B-YPC21	3.71	3.50	0.02	3	2.40	FALSE
Loktanella maritima 06-YPC210	*Altermonas* sp. 03-YPC23	3.71	3.18	0.02	3	6.00	TRUE
Loktanella maritima 06-YPC210	*P. inhibens* S4	3.71	3.80	0.02	3	1.01	FALSE
Loktanella maritima 06-YPC211	*Pseudoalteromonas* sp. 08-SWC22	3.71	3.58	0.02	3	1.49	FALSE
Loktanella maritima 06-YPC211	*Pseudoalteromonas* sp. 08-YPC21	3.71	2.55	0.02	3	13.09	TRUE
Loktanella maritima 06-YPC211	*Pseudoalteromonas* sp. 08-SWC21	3.71	2.18	0.02	3	17.20	TRUE
Loktanella maritima 06-YPC211	*Pseudoalteromonas* sp. 03-YP014	3.71	3.25	0.02	3	5.21	TRUE
Loktanella maritima 06-YPC211	*Pseudoalteromonas* sp. 02-YP012	3.71	3.17	0.02	3	6.07	TRUE
Loktanella maritima 06-YPC211	*Pseudoalteromonas* sp. 06-YPC22	3.71	3.71	0.02	3	0.04	FALSE
Loktanella maritima 06-YPC211	*Pseudoalteromonas* sp. 06-YPC21	3.71	3.12	0.02	3	6.64	TRUE
Loktanella maritima 06-YPC211	*Pseudoalteromonas* sp. 09-YP018	3.71	2.90	0.02	3	9.14	TRUE
Loktanella maritima 06-YPC211	*Pseudoalteromonas* sp. 09-YPC25	3.71	2.80	0.02	3	10.25	TRUE
Loktanella maritima 06-YPC211	*Pseudoalteromonas* sp. 09-YPC23	3.71	2.72	0.02	3	11.17	TRUE
Loktanella maritima 06-YPC211	*Pseudoalteromonas* sp. 09-YPO19	3.71	2.87	0.02	3	9.50	TRUE
Loktanella maritima 06-YPC211	*Pseudoalteromonas* sp. 10B-YPO11	3.71	3.33	0.02	3	4.32	TRUE
Loktanella maritima 06-YPC211	*Pseudoalteromonas* sp. 09-YPC29	3.71	3.04	0.02	3	7.58	TRUE
Loktanella maritima 06-YPC211	*Pseudoalteromonas* sp. 06-SWC23	3.71	2.43	0.02	3	14.36	TRUE
Loktanella maritima 06-YPC211	*Pseudoalteromonas* sp. 02-YPC22	3.71	2.04	0.02	3	18.75	TRUE
Loktanella maritima 06-YPC211	*Pseudoalteromonas* sp. 11-YP013	3.71	2.53	0.02	3	13.28	TRUE
Loktanella maritima 06-YPC211	*Pseudoalteromonas* sp. 11-YPC25	3.71	1.82	0.02	3	21.31	TRUE
Loktanella maritima 06-YPC211	*Pseudoalteromonas* sp. 09-YP001	3.71	3.18	0.02	3	6.00	TRUE
Loktanella maritima 06-YPC211	*Pseudoalteromonas* sp. 11-YP016	3.71	2.13	0.02	3	17.74	TRUE
Loktanella maritima 06-YPC211	*Bacillus* sp. 06-YP001	3.71	2.88	0.02	3	9.36	TRUE
Loktanella maritima 06-YPC211	*Loktanella maritima* 06-YPC210	3.71	3.71	0.02	3	0.00	FALSE
Loktanella maritima 06-YPC211	*Loktanella maritima* 06-YPC211	3.71	3.71	0.02	3	0.00	FALSE
Loktanella maritima 06-YPC211	*Cobetia* sp. 10B-YPC21	3.71	3.50	0.02	3	2.40	FALSE
Loktanella maritima 06-YPC211	*Altermonas* sp. 03-YPC23	3.71	3.18	0.02	3	6.00	TRUE
Loktanella maritima 06-YPC211	*P. inhibens* S4	3.71	3.80	0.02	3	1.01	FALSE
Cobetia sp. 10B-YPC21	*Pseudoalteromonas* sp. 08-SWC22	3.50	3.58	0.02	3	0.91	FALSE
Cobetia sp. 10B-YPC21	*Pseudoalteromonas* sp. 08-YPC21	3.50	2.55	0.02	3	10.69	TRUE
Cobetia sp. 10B-YPC21	*Pseudoalteromonas* sp. 08-SWC21	3.50	2.18	0.02	3	14.80	TRUE
Cobetia sp. 10B-YPC21	*Pseudoalteromonas* sp. 03-YP014	3.50	3.25	0.02	3	2.81	FALSE
Cobetia sp. 10B-YPC21	*Pseudoalteromonas* sp. 02-YP012	3.50	3.17	0.02	3	3.67	TRUE

Group 1 (M1)	Group 2 (M2)	M1	M2	MSw	N	Tukey 's HSD q[a]	Signifcance[b]
Cobetia sp. 10B-YPC21	*Pseudoalteromonas* sp. 06-YPC22	3.50	3.71	0.02	3	2.44	FALSE
Cobetia sp. 10B-YPC21	*Pseudoalteromonas* sp. 06-YPC21	3.50	3.12	0.02	3	4.24	TRUE
Cobetia sp. 10B-YPC21	*Pseudoalteromonas* sp. 09-YP018	3.50	2.90	0.02	3	6.74	TRUE
Cobetia sp. 10B-YPC21	*Pseudoalteromonas* sp. 09-YPC25	3.50	2.80	0.02	3	7.85	TRUE
Cobetia sp. 10B-YPC21	*Pseudoalteromonas* sp. 09-YPC23	3.50	2.72	0.02	3	8.77	TRUE
Cobetia sp. 10B-YPC21	*Pseudoalteromonas* sp. 09-YPO19	3.50	2.87	0.02	3	7.10	TRUE
Cobetia sp. 10B-YPC21	*Pseudoalteromonas* sp. 10B-YPO11	3.50	3.33	0.02	3	1.92	FALSE
Cobetia sp. 10B-YPC21	*Pseudoalteromonas* sp. 09-YPC29	3.50	3.04	0.02	3	5.18	TRUE
Cobetia sp. 10B-YPC21	*Pseudoalteromonas* sp. 06-SWC23	3.50	2.43	0.02	3	11.96	TRUE
Cobetia sp. 10B-YPC21	*Pseudoalteromonas* sp. 02-YPC22	3.50	2.04	0.02	3	16.35	TRUE
Cobetia sp. 10B-YPC21	*Pseudoalteromonas* sp. 11-YP013	3.50	2.53	0.02	3	10.88	TRUE
Cobetia sp. 10B-YPC21	*Pseudoalteromonas* sp. 11-YPC25	3.50	1.82	0.02	3	18.91	TRUE
Cobetia sp. 10B-YPC21	*Pseudoalteromonas* sp. 09-YP001	3.50	3.18	0.02	3	3.60	TRUE
Cobetia sp. 10B-YPC21	*Pseudoalteromonas* sp. 11-YP016	3.50	2.13	0.02	3	15.34	TRUE
Cobetia sp. 10B-YPC21	*Bacillus* sp. 06-YP001	3.50	2.88	0.02	3	6.96	TRUE
Cobetia sp. 10B-YPC21	*Loktanella maritima* 06-YPC210	3.50	3.71	0.02	3	2.40	FALSE
Cobetia sp. 10B-YPC21	*Loktanella maritima* 06-YPC211	3.50	3.71	0.02	3	2.40	FALSE
Cobetia sp. 10B-YPC21	*Cobetia* sp. 10B-YPC21	3.50	3.50	0.02	3	0.00	FALSE
Cobetia sp. 10B-YPC21	*Altermonas* sp. 03-YPC23	3.50	3.18	0.02	3	3.60	TRUE
Cobetia sp. 10B-YPC21	*P. inhibens* S4	3.50	3.80	0.02	3	3.41	FALSE
Altermonas sp. 03-YPC23	*Pseudoalteromonas* sp. 08-SWC22	3.18	3.58	0.02	3	4.50	TRUE
Altermonas sp. 03-YPC23	*Pseudoalteromonas* sp. 08-YPC21	3.18	2.55	0.02	3	7.09	TRUE
Altermonas sp. 03-YPC23	*Pseudoalteromonas* sp. 08-SWC21	3.18	2.18	0.02	3	11.21	TRUE
Altermonas sp. 03-YPC23	*Pseudoalteromonas* sp. 03-YP014	3.18	3.25	0.02	3	0.78	FALSE
Altermonas sp. 03-YPC23	*Pseudoalteromonas* sp. 02-YP012	3.18	3.17	0.02	3	0.07	FALSE
Altermonas sp. 03-YPC23	*Pseudoalteromonas* sp. 06-YPC22	3.18	3.71	0.02	3	6.04	TRUE
Altermonas sp. 03-YPC23	*Pseudoalteromonas* sp. 06-YPC21	3.18	3.12	0.02	3	0.64	FALSE
Altermonas sp. 03-YPC23	*Pseudoalteromonas* sp. 09-YP018	3.18	2.90	0.02	3	3.14	FALSE
Altermonas sp. 03-YPC23	*Pseudoalteromonas* sp. 09-YPC25	3.18	2.80	0.02	3	4.25	TRUE
Altermonas sp. 03-YPC23	*Pseudoalteromonas* sp. 09-YPC23	3.18	2.72	0.02	3	5.18	TRUE
Altermonas sp. 03-YPC23	*Pseudoalteromonas* sp. 09-YPO19	3.18	2.87	0.02	3	3.51	FALSE
Altermonas sp. 03-YPC23	*Pseudoalteromonas* sp. 10B-YPO11	3.18	3.33	0.02	3	1.68	FALSE
Altermonas sp. 03-YPC23	*Pseudoalteromonas* sp. 09-YPC29	3.18	3.04	0.02	3	1.58	FALSE
Altermonas sp. 03-YPC23	*Pseudoalteromonas* sp. 06-SWC23	3.18	2.43	0.02	3	8.37	TRUE
Altermonas sp. 03-YPC23	*Pseudoalteromonas* sp. 02-YPC22	3.18	2.04	0.02	3	12.75	TRUE
Altermonas sp. 03-YPC23	*Pseudoalteromonas* sp. 11-YP013	3.18	2.53	0.02	3	7.29	TRUE
Altermonas sp. 03-YPC23	*Pseudoalteromonas* sp. 11-YPC25	3.18	1.82	0.02	3	15.32	TRUE
Altermonas sp. 03-YPC23	*Pseudoalteromonas* sp. 09-YP001	3.18	3.18	0.02	3	0.00	FALSE
Altermonas sp. 03-YPC23	*Pseudoalteromonas* sp. 11-YP016	3.18	2.13	0.02	3	11.74	TRUE
Altermonas sp. 03-YPC23	*Bacillus* sp. 06-YP001	3.18	2.88	0.02	3	3.36	FALSE
Altermonas sp. 03-YPC23	*Loktanella maritima* 06-YPC210	3.18	3.71	0.02	3	6.00	TRUE
Altermonas sp. 03-YPC23	*Loktanella maritima* 06-YPC211	3.18	3.71	0.02	3	6.00	TRUE
Altermonas sp. 03-YPC23	*Cobetia* sp. 10B-YPC21	3.18	3.50	0.02	3	3.60	TRUE

Group 1 (M1)	Group 2 (M2)	M1	M2	MSw	N	Tukey 's HSD q[a]	Signifcance[b]
Altermonas sp. 03-YPC23	*Altermonas* sp. 03-YPC23	3.18	3.18	0.02	3	0.00	FALSE
Altermonas sp. 03-YPC23	*P. inhibens* S4	3.18	3.80	0.02	3	7.01	TRUE
P. inhibens S4	*Pseudoalteromonas* sp. 08-SWC22	3.80	3.58	0.02	3	2.50	FALSE
P. inhibens S4	*Pseudoalteromonas* sp. 08-YPC21	3.80	2.55	0.02	3	14.10	TRUE
P. inhibens S4	*Pseudoalteromonas* sp. 08-SWC21	3.80	2.18	0.02	3	18.22	TRUE
P. inhibens S4	*Pseudoalteromonas* sp. 03-YP014	3.80	3.25	0.02	3	6.22	TRUE
P. inhibens S4	*Pseudoalteromonas* sp. 02-YP012	3.80	3.17	0.02	3	7.08	TRUE
P. inhibens S4	*Pseudoalteromonas* sp. 06-YPC22	3.80	3.71	0.02	3	0.97	FALSE
P. inhibens S4	*Pseudoalteromonas* sp. 06-YPC21	3.80	3.12	0.02	3	7.65	TRUE
P. inhibens S4	*Pseudoalteromonas* sp. 09-YP018	3.80	2.90	0.02	3	10.15	TRUE
P. inhibens S4	*Pseudoalteromonas* sp. 09-YPC25	3.80	2.80	0.02	3	11.26	TRUE
P. inhibens S4	*Pseudoalteromonas* sp. 09-YPC23	3.80	2.72	0.02	3	12.19	TRUE
P. inhibens S4	*Pseudoalteromonas* sp. 09-YPO19	3.80	2.87	0.02	3	10.51	TRUE
P. inhibens S4	*Pseudoalteromonas* sp. 10B-YPO11	3.80	3.33	0.02	3	5.33	TRUE
P. inhibens S4	*Pseudoalteromonas* sp. 09-YPC29	3.80	3.04	0.02	3	8.59	TRUE
P. inhibens S4	*Pseudoalteromonas* sp. 06-SWC23	3.80	2.43	0.02	3	15.37	TRUE
P. inhibens S4	*Pseudoalteromonas* sp. 02-YPC22	3.80	2.04	0.02	3	19.76	TRUE
P. inhibens S4	*Pseudoalteromonas* sp. 11-YP013	3.80	2.53	0.02	3	14.29	TRUE
P. inhibens S4	*Pseudoalteromonas* sp. 11-YPC25	3.80	1.82	0.02	3	22.33	TRUE
P. inhibens S4	*Pseudoalteromonas* sp. 09-YP001	3.80	3.18	0.02	3	7.01	TRUE
P. inhibens S4	*Pseudoalteromonas* sp. 11-YP016	3.80	2.13	0.02	3	18.75	TRUE
P. inhibens S4	*Bacillus* sp. 06-YP001	3.80	2.88	0.02	3	10.37	TRUE
P. inhibens S4	*Loktanella maritima* 06-YPC210	3.80	3.71	0.02	3	1.01	FALSE
P. inhibens S4	*Loktanella maritima* 06-YPC211	3.80	3.71	0.02	3	1.01	FALSE
P. inhibens S4	*Cobetia* sp. 10B-YPC21	3.80	3.50	0.02	3	3.41	FALSE
P. inhibens S4	*Altermonas* sp. 03-YPC23	3.80	3.18	0.02	3	7.01	TRUE
P. inhibens S4	*P. inhibens* S4	3.80	3.80	0.02	3	0.00	FALSE

[a] Tukey 's HSD q= (M1- M2)/√(MSw x (1/n))

[b] True= Tukey 's HSD q>3.53 (blue highlight), False= Tukey 's HSD q<3.53

[c] Green highlight is comparison of self to self

Appendix 8. Tuckey Honest Significant Difference Test between Glass Cover Slip CFU measurements

Group 1 (M1)	Group 2 (M2)	M1	M2	MSw	N	Tukey 's HSD q[a]	Signifcance[b]
Phaeobacter inhibens S4	*Loktanella maritima* 06-YPC210	8255555.56	361111.111	2.10938E+11	3	29.77180351	TRUE
Phaeobacter inhibens S4	*Loktanella maritima* 06-YPC211	8255555.56	5022222.22	2.10938E+11	3	12.19365914	TRUE
Phaeobacter inhibens S4	*Pseudoalteromonas* sp. 03-YP014	8255555.56	121111.111	2.10938E+11	3	30.67689986	TRUE
Phaeobacter inhibens S4	*Pseudoalteromonas* sp. 08-YPC21	8255555.56	206666.667	2.10938E+11	3	30.35424977	TRUE
Phaeobacter inhibens S4	*Bacillus* sp. 06-YP001	8255555.56	2033333.33	2.10938E+11	3	23.4654609	TRUE
Phaeobacter inhibens S4	Phaeobacter inhibens S4[c]	8255555.56	8255555.56	2.10938E+11	3	0	FALSE
Loktanella maritima 06-YPC210	*Loktanella maritima* 06-YPC210	361111.111	361111.111	2.10938E+11	3	0	FALSE
Loktanella maritima 06-YPC210	*Loktanella maritima* 06-YPC211	361111.111	5022222.22	2.10938E+11	3	-17.57814437	FALSE
Loktanella maritima 06-YPC210	*Pseudoalteromonas* sp. 03-YP014	361111.111	121111.111	2.10938E+11	3	0.905096349	FALSE
Loktanella maritima 06-YPC210	*Pseudoalteromonas* sp. 08-YPC21	361111.111	206666.667	2.10938E+11	3	0.582446262	FALSE
Loktanella maritima 06-YPC210	*Bacillus* sp. 06-YP001	361111.111	2033333.33	2.10938E+11	3	-6.306342616	FALSE
Loktanella maritima 06-YPC210	Phaeobacter inhibens S4	361111.111	8255555.56	2.10938E+11	3	-29.77180351	FALSE
Loktanella maritima 06-YPC211	*Loktanella maritima* 06-YPC210	5022222.22	361111.111	2.10938E+11	3	17.57814437	TRUE
Loktanella maritima 06-YPC211	*Loktanella maritima* 06-YPC211	5022222.22	5022222.22	2.10938E+11	3	0	FALSE
Loktanella maritima 06-YPC211	*Pseudoalteromonas* sp. 03-YP014	5022222.22	121111.111	2.10938E+11	3	18.48324072	TRUE
Loktanella maritima 06-YPC211	*Pseudoalteromonas* sp. 08-YPC21	5022222.22	206666.667	2.10938E+11	3	18.16059063	TRUE
Loktanella maritima 06-YPC211	*Bacillus* sp. 06-YP001	5022222.22	2033333.33	2.10938E+11	3	11.27180175	TRUE
Loktanella maritima 06-YPC211	Phaeobacter inhibens S4	5022222.22	8255555.56	2.10938E+11	3	-12.19365914	FALSE
Pseudoalteromonas sp. 03-YP014	*Loktanella maritima* 06-YPC210	121111.111	361111.111	2.10938E+11	3	-0.905096349	FALSE
Pseudoalteromonas sp. 03-YP014	*Loktanella maritima* 06-YPC211	121111.111	5022222.22	2.10938E+11	3	-18.48324072	FALSE
Pseudoalteromonas sp. 03-YP014	*Pseudoalteromonas* sp. 03-YP014	121111.111	121111.111	2.10938E+11	3	0	FALSE
Pseudoalteromonas sp. 03-YP014	*Pseudoalteromonas* sp. 08-YPC21	121111.111	206666.667	2.10938E+11	3	-0.322650087	FALSE
Pseudoalteromonas sp. 03-YP014	*Bacillus* sp. 06-YP001	121111.111	2033333.33	2.10938E+11	3	-7.211438965	FALSE
Pseudoalteromonas sp. 03-YP014	Phaeobacter inhibens S4	121111.111	8255555.56	2.10938E+11	3	-30.67689986	FALSE
Pseudoalteromonas sp. 08-YPC21	*Loktanella maritima* 06-YPC210	206666.667	361111.111	2.10938E+11	3	-0.582446262	FALSE
Pseudoalteromonas sp. 08-YPC21	*Loktanella maritima* 06-YPC211	206666.667	5022222.22	2.10938E+11	3	-18.16059063	FALSE
Pseudoalteromonas sp. 08-YPC21	*Pseudoalteromonas* sp. 03-YP014	206666.667	121111.111	2.10938E+11	3	0.322650087	FALSE
Pseudoalteromonas sp. 08-YPC21	*Pseudoalteromonas* sp. 08-YPC21	206666.667	206666.667	2.10938E+11	3	0	FALSE
Pseudoalteromonas sp. 08-YPC21	*Bacillus* sp. 06-YP001	206666.667	2033333.33	2.10938E+11	3	-6.888788877	FALSE
Pseudoalteromonas sp. 08-YPC21	Phaeobacter inhibens S4	206666.667	8255555.56	2.10938E+11	3	-30.35424977	FALSE
Bacillus sp. 06-YP001	*Loktanella maritima* 06-YPC210	2033333.33	361111.111	2.10938E+11	3	6.306342616	TRUE
Bacillus sp. 06-YP001	*Loktanella maritima* 06-YPC211	2033333.33	5022222.22	2.10938E+11	3	-11.27180175	FALSE
Bacillus sp. 06-YP001	*Pseudoalteromonas* sp. 03-YP014	2033333.33	121111.111	2.10938E+11	3	7.211438965	TRUE
Bacillus sp. 06-YP001	*Pseudoalteromonas* sp. 08-YPC21	2033333.33	206666.667	2.10938E+11	3	6.888788877	TRUE
Bacillus sp. 06-YP001	*Bacillus* sp. 06-YP001	2033333.33	2033333.33	2.10938E+11	3	0	FALSE
Bacillus sp. 06-YP001	Phaeobacter inhibens S4	2033333.33	8255555.56	2.10938E+11	3	-23.4654609	FALSE

[a] Tukey 's HSD q= (M1- M2)/√(MSw x (1/n))

[b] True= Tukey 's HSD q>3.53 (blue highlight), False= Tukey 's HSD q<3.53

[c] Green highlight is comparison of self to self